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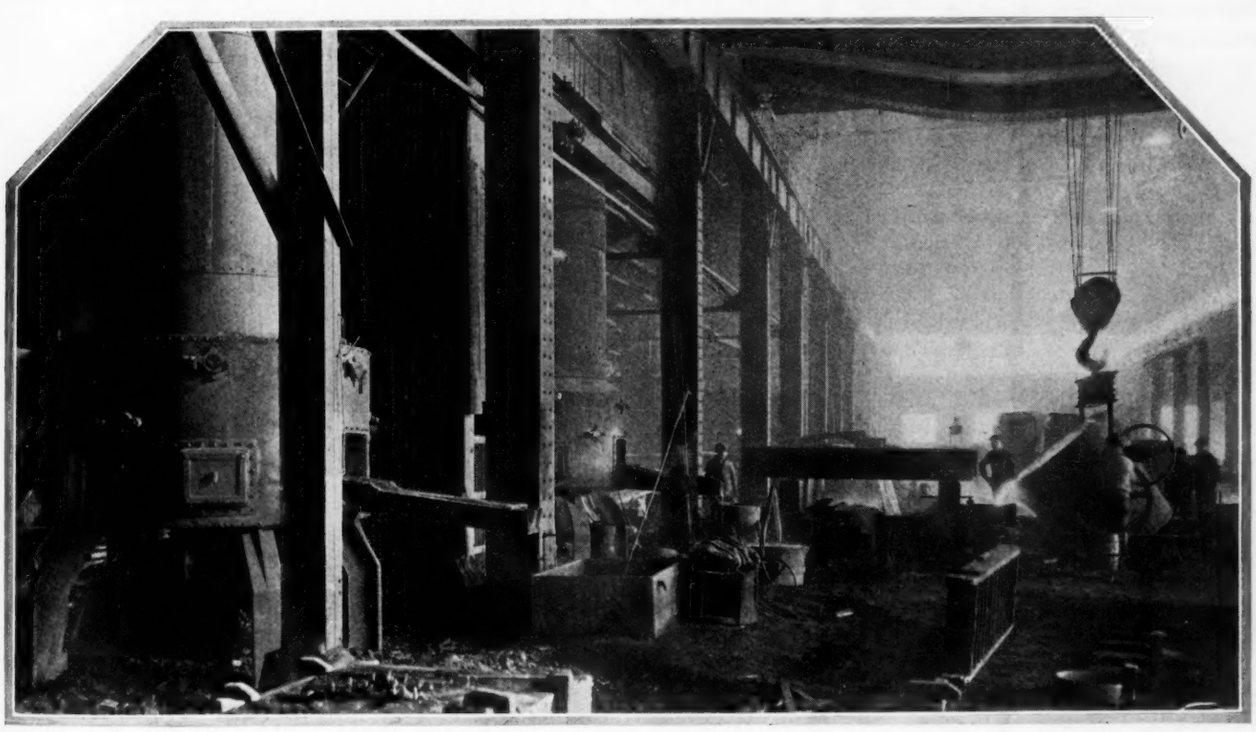
Production Schedules Maintained While Equipment Is Relocated

Expanding Market Compels Machinery Maker in Pittsburgh District To Seek Larger Quarters—New Facilities Afford Improvement in Operating Efficiency

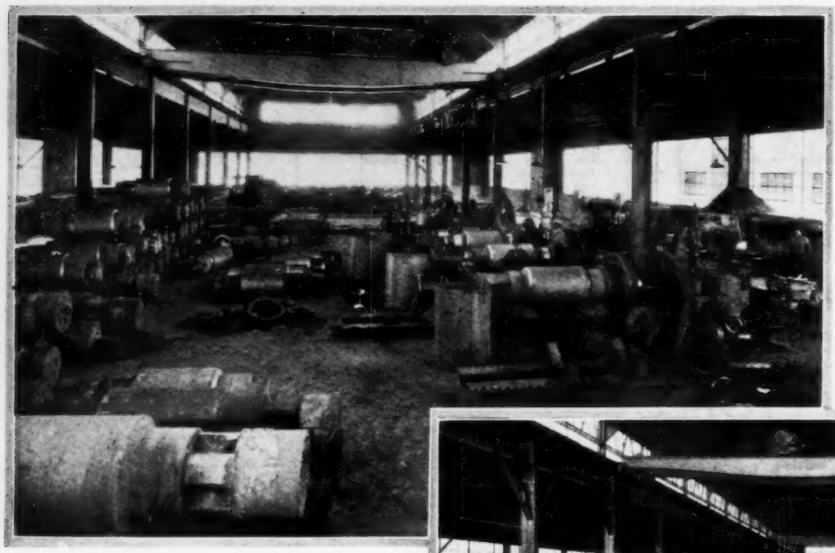
By W. G. Gude

MOVING its plant from one location to another one-half mile away without serious interference with operations was the task recently accomplished by the Hyde Park Foundry & Machine Co., Hyde Park, Pa., Pittsburgh district. The company manufactures heavy machinery for rolling mills including roll trains with housings, shoe plates, etc., squaring shears up to 160 inches wide, roll lathes, stretcher levelers, chilled rolls for sheet and tin mills and special machines. The company operates a gray iron foundry, roll foundry, machine shop and pattern shop, and in addition to its regular line of products, does jobbing machine and foundry work.

The Hyde Park Foundry & Machine Co. was established in 1895 and prior to building its new plant was located near the bank of the Kiskiminetas river. High water proved troublesome



Pouring floor in new foundry. Hot metal from two cupolas, shown at the left, is transferred to molds by a 5-ton overhead traveling crane



ONE end of the machine shop building houses the roll turning department, as shown in the top illustration. Rolls coming from the foundry are piled near the seven lathes, which finish them to the proper contour. Below is shown the machine shop, where rough castings are finished to specifications. Two overhead cranes facilitate the movement of work to and from the various machine tools.

at times, flooding portions of the plant and seriously hampering operations, particularly in the foundry. In addition, the company's business had expanded in recent years and its facilities became inadequate for efficient operations. Inability to obtain sufficient adjoining land, coupled with the undesirability of the former location, prompted it to seek another site on higher ground a short distance up the river. This latter spot formerly was occupied by a plant of the American Sheet & Tin Plate Co., which had been built in 1895 but abandoned in 1925. The Hyde Park company was able to adapt the steel framework of the steel company's old main building as part of its new foundry building by adding considerable length to it and by the addition of a crane yard.

Serves As Storage Building

The old building was moved and placed parallel with the new foundry building to be used as a covered store yard for pig iron, scrap, coal, coke, etc. The unloading of these raw materials is accomplished by a 15-ton crane. The machine shop building is new except that the steel framework of the old building was used in the new building which has double the floor area of the old building. The pattern shop, pattern storage buildings, power house, office, and all other buildings are new.

Faced with the necessity of maintaining production while the moving of equipment from one plant to the new site was under way, the company planned its transfer program on a piecemeal basis. Portions of certain departments were moved to the new location and set into operation before remaining equipment was transferred. By this method each department was able to operate at all times, although at a rate somewhat lower.

The new foundry building was completed first and two new 20-ton, and two 15-ton air furnaces were built, giving a 70-ton daily capacity to the roll foundry, whereas the old plant had three 15-ton air furnaces. At the old site two cupolas were located, although at the time of transferal only one was being operated. The idle cupola was erected and at the time of the change-over the gray iron foundry was placed in operation. The remaining cupola then was shut down and removed to the new location. These four air furnaces and two cupolas give an annual casting capacity of 15,000 tons in the roll foundry and 15,000 tons in the gray iron foundry.

As stated before, the machine shop now used is a new structure. During the course of its construction, however, the roll shop was removed from the old plant and set up in one end of the new foundry. Upon the completion of the former, this equipment was transferred to its present location. The lathes, planers, shapers, and other tools were kept in operation at the old plant until the new machine shop was completed, at which time the changeover was accomplished.

The entire procedure was carried out slowly in order to minimize delays in production, about a year and a half being required for the transfer. All equipment had been removed from the old plant by November, 1927, and the new layout was practically complete early in 1928.

Better Efficiency Obtained

Both increased capacity and improved efficiency have resulted from the construction of the new facilities. The foundry is built perpendicular to the machine shop. Castings are easily moved to the latter by means of a small transfer truck operated on a track connecting the two buildings. Electric cranes in both departments, one of 25-ton capacity and another of 20-ton in the foundry, and one 20-ton crane and another 15-ton in the machine shop, facilitate this movement. Spur tracks from the Pennsylvania railroad lead directly into the latter building and into the storage space.

The structure used for loading and storing purposes is directly adjacent to the foundry and contains a 5-ton crane. From here the various raw materials are hoisted to the charging floor of the two cupolas. The foundry itself is apportioned so that green sand castings are made at the one end where the two cupolas are located,

New plant of the Hyde Park Foundry & Machine Co. located in the Pittsburgh district. The company formerly occupied quarters about one-half mile away

while rolls are cast at the other. The four air furnaces and cupolas all are located on the same side of the foundry. Drying ovens, sand and flasks occupy the opposite side. The pit in which molds are placed when rolls are being cast is conveiently located at about the center of the four air furnaces.

The machine shop is a spacious well-lighted building. Equipment is arranged to necessitate a minimum of waste motion in the machining and moving of castings. Seven roll lathes occupy about one-third the length of the structure, the remainder being given over to other machining operations. Roll castings coming from the foundry are piled opposite the lathes. The loading track is located only a short distance from the lathes. Another track is conveniently located for loading roll housings and other machined parts coming from the opposite end of the building.

Export orders from England and France received by the Lynch Glass Machine Co., Anderson, Ind., are almost equal to domestic busines, according to E. F. Dice, manager. The company experiences difficulty obtaining general machinists.

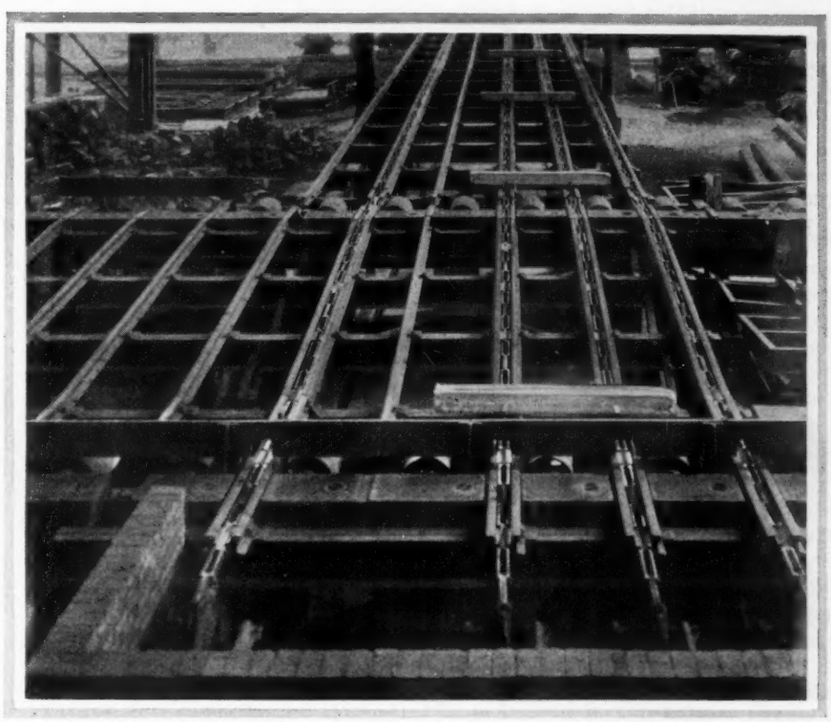
Table Facilitates Routing of Blooms

QUANTITY production of alloy steels covering a wide variation in analysis involves several difficult problems in the routing and treatment of material.

In the new plant of the Timken Steel & Tube Co., Canton, O., a chain transfer table which has an overall length of 81 feet, and a width sufficient to accommodate either two rows of 9 foot blooms, or a single row of 18 foot blooms, was built with special regard to the service desired. It is located at right angles to the shear runout table, so that it can handle all blooms coming from the shears.

The table proper consists of a series of heavy rails, acting as skids and supported by channel members about 6 feet apart. The latter are supported at the ends by structural uprights, which are braced by cross-members extending from the top of one column to the base of the adjacent ones on each side. The table has a total rise of 6 feet from the charging to the discharge end with a level point about 15 feet from the end nearest the hot shear, where the runout table leading to the 28-inch mill is located. This arrangement gives the operator a clear view of the blooms on the table.

The operation of the transfer table and the two runout tables is controlled from one point near the juncture of the table with the shear runout table. Thus it is possible for one operator to route blooms coming from the shear to any one of three destinations. Those intended for rolling without treatment can be sent directly to the rolling mill by a live roll table which crosses the transfer table about 15 feet from its beginning. Those which require reheating travel to a second live roll table located at the extreme end of the transfer table, which carries them to the entrance of the reheating furnaces. And those which are to be thermally conditioned, or chipped are carried over the end of the transfer table, and deposited in cradles in which they are carried by cranes to their ultimate destinations.



General view of transfer table from the operator's control station

Metallography Simplified for Practical Use In Shop

By
E. Preuss
G. Berndt
M. v. Schwarz

Translated from the German by Richard Rimbach

Chap. IX—Hardened Steel (Continued)

IF A HYPEREUTECTOID steel once has been heated too high and too long so that cementite has been formed in the shape of large meshes, these meshes must be reduced before hardening. This may be done by forging at low red heat but the shape then also is changed. Reduction of these meshes is possible by suitable heat treating. The steel should be heated above the upper transformation temperature and then quenched in a salt or lead bath at about 550 to 650 degrees Cent., but by no means in water since this brittle steel would be totally shattered by hardening cracks. Drastic quenching is not necessary for the refinement as it is necessary only to reach quickly a temperature below the lower transformation point, about 700 degrees Cent.

If tool steel, during heating for hardening is kept a little above the upper transformation temperature not longer than necessary, and then quenched, a structureless martensite is obtained which also is called hardenite. Under the microscope it shows only light surfaces unattached by etching solutions, without needles, grain boundaries or twin formation. Tools which show hardenite after quenching have been hardened excellently. A structure similar to hardenite also is found in hardened chromium steel and high-speed steel.

Martensite is unstable at normal temperatures and tends, therefore, to transform into the stable pearlite structure. At usual temperatures it can follow this tendency; but the transformation is made easier as the temperature is raised. If, therefore, a hardened steel is heated a more or less complete transformation of the martensite occurs, according to the temperature used. For annealing temperatures up to 400 degrees Cent., the martensite needles which at first

Hardening Is Continued

THIS is the sixteenth installment in the series of articles on metallography which started in the June 14 issue. The present installment is the second part of Chapter IX, dealing with hardened steel and case hardening. The chapter consists of four parts, the third of which will appear Jan. 24. Further information on structures obtained in quenching and the effects of case hardening will be given in this next article.

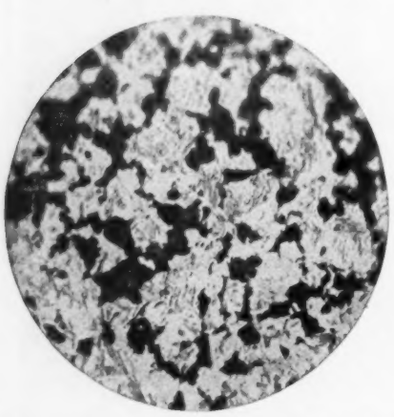


Fig. 101 *(Left)—Steel containing* 0.8 *per cent carbon, quenched in oil from* 800 *degrees Cent. Structure is troostite and martensite. X* 450. *Fig.* 102 *(Center)—Steel containing* 0.8 *per cent carbon, quenched and then drawn* 600 *degrees Cent. Structure is sorbite. X* 75. *Fig.* 103 *(Right)—Steel cooled in air after heating. X* 52. *All samples etched microscopically*

remain light when etched with nitric acid, become darker and darker and finally are transformed into deep, dark spots not resolvable under the microscope and which are called troostite. Strangely enough troostite also occurs if the quenching is less rapid, such as when oil is used as a means of cooling, or in thicker pieces in which the decrease in temperature does not take place uniformly throughout the whole thickness and which, therefore, are cooled slower in the center. This is shown in Fig. 101, a steel with 0.8 per cent carbon, which has been quenched from 800 degrees Cent. in oil. In this photomicrograph a greater number of the dark troostite spots can be observed in addition to the light martensite. These can be distinguished from the dark pearlite spots by the fact that even with the highest magnification they cannot be resolved into lamellae. A difference exists between the structure obtained by slower quenching and that obtained by tempering insofar as in the first case the structure is not uniform over the whole section, as Fig. 101 shows.

FIG. 105—Tool steel containing 1.54 per cent carbon, quenched in water from 1280 degrees Cent., showing dark hardening cracks and coarse martensite needles. Etched microscopically. X 200

If the tempering temperature is increased from 400 to 700 degrees Cent. troostite is transformed into another constituent, sorbite shown in Fig. 102 which represent a steel with 0.8 per cent carbon. A fine texture hardly to be defined may be noticed which, with higher magnification, proves to be granular pearlite. Depending upon the manner of quenching or the temperature, the stucture will consist of needle-shaped martensite, the dark, microscopically unresolvable troostite, or the fine-grained sorbite. Thus it is seen that from the kind of structure of the etched and polished sections, not only the hardness, but also the tempering temperature can be recognized. The individual components of the structure, however, cannot always be distinguished metallographically from one another. It can be done with certainty if the sections are placed for about 24 hours in a 1 per cent sulphuric acid solution and their solubility determined in the presence or absence of air. Fig. 104 shows these changes diagramatically when tempering at different temperatures according to E. Heyn and O. Bauer.[17] As can be seen from the table of microscopic and chemical reactions given with this diagram, according to E. Heyn, the steel tempered at 400 degrees Cent. shows a maximum of dark coloration and solubility. For this reason its structure has been given a special name, Osmondite, in honor of Osmond, discoverer of the critical points.

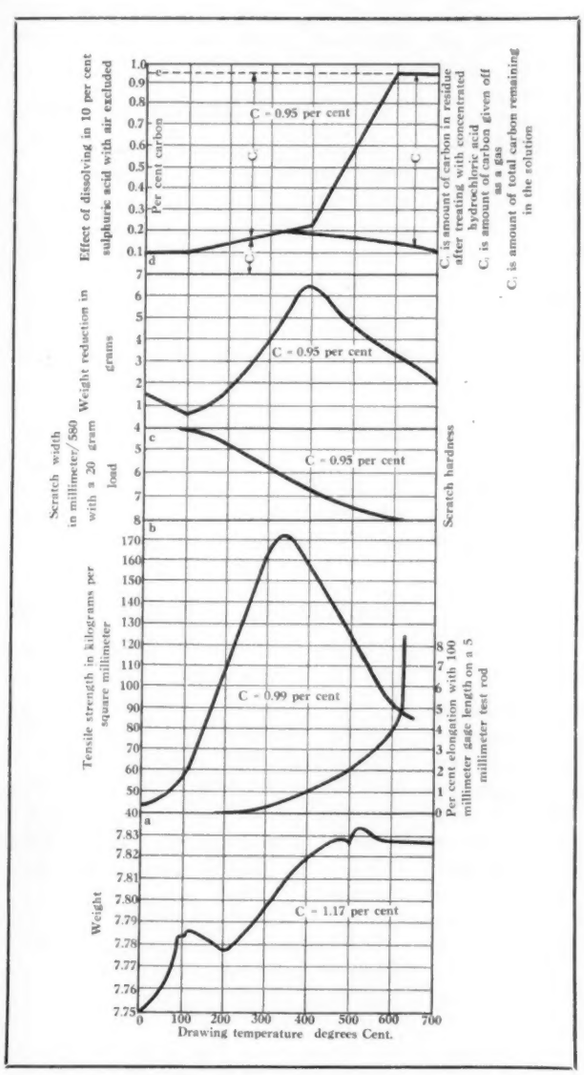

Effect of dissolving in 10 per cent sulphuric acid with air excluded
Per cent carbon
C = 0.95 per cent
C, is amount of carbon in residue after treating with concentrated hydrochloric acid
C, is amount of carbon given off as a gas
C, is amount of total carbon remaining in the solution
Weight reduction in grams
C = 0.95 per cent
Scratch width in millimeter/880 with a 20 gram load
C = 0.95 per cent
Scratch hardness
Tensile strength in kilograms per square millimeter
C = 0.99 per cent
Per cent elongation with 100 millimeter gage length on a 5 millimeter test rod
Weight
C = 1.17 per cent
Drawing temperature degrees Cent.

Fig. 104—Curves showing changes in properties of hardened eutectoid steel by drawing at different temperatures

If quenching is carried out still more moderately than in oil, such as by cooling in air or in hot water, a structure similar to martensite still will be obtained. This is shown in Fig. 103 which represents a steel heated for three minutes in a forge fire and then cooled in air; it still shows the martensite needles but in addition a certain crystal definition which is absent in the real martensite. This structure is characteristic for steel which has been quenched mildly from a temperature above the Ac_3 point. It occurs in highly heated steam boiler plates after quenching by the boiler water, and also in the immediate neighborhood of oxyacetylene-welded spots. Just as the purely martensitic structure, this latter structure can be removed by annealing, whereby at the same time brittleness connected with it disappears. Internal stresses caused by the great temperature changes during welding also are removed by annealing.

The strength of steel is somewhat reduced by tempering, but at the same time its elongation and toughness are increased so that pieces which must resist stresses can be made much more suitable for their purpose by hardening and subsequent tempering, a procedure which is applicable especially to special alloy steels in the automobile industry. Compared with

[17] Metallographie, Goeschen, third edition, page 90-91; and H. Hanemann: Einfuehrung in die Metallographie, Berlin.

Table of Microscopic and Chemical Reactions of Hardened Eutectoid Steel at Various Drawing Temperatures

Drawing temperature	Structure	Appearance	Hardness	Etched with alcoholic hydrochloric acid	Solubility in dilute sulphuric acid	
					In air	Absence of air
Not drawn	*Martensite*	*Needles*	*Greatest*	*Remains light*	*Slow*	*Main quantity of carbon escapes as hydrocarbons. Remainder as free carbon*
Below 400 degrees Cent.	*Troostite*	*Single needles dark, others light; round black spots*	*Softer*	*Dark color increases with increasing drawing temperature*	*Increases with creasing drawing temperature*	*Free carbon increases with increasing drawing temperature*
400 degrees Cent.	*Osmondite*	*No more small needles*	*Still softer*	*Maximum dark color*	*Maximum*	*Maximum free carbon*
400-700 degrees Cent.	*Sorbite*	*Small round cementite islands*	*Still softer*	*Dark color decreases with increasing drawing temperature*	*Decreases with increasing drawing temperature*	*Free carbon decreases with increasing drawing temperature*
721 degrees Cent.	*Pearlite*	*Lamellar or Granular*	*Least*	—	—	—

the milder quenching, the refined steel has, as already mentioned, the advantage of a structure uniform over the entire section.

When larger pieces or pieces of irregular shape with sharply changing sections are quenched in water, considerable care must be taken to avoid the occurrence of hardness cracks. They are due to martensite having a large volume so that the iron expands on quenching as is indicated by the specific gravity which for hardened steel is about 0.02 to 0.09 lower than for annealed steel. Consequently, cylinders assume, on hardening, a keg-shaped form. The end faces of short cylinders bulge outwardly, while in the long thin cylinders a contraction takes place. Due to these stresses cracks occur, as in Fig. 105, a steel with 1.54 per cent carbon, which was quenched in water from 1280 degrees Cent. Since troostite occupies a smaller volume, the change in volume when quenching in oil is not so great; for the same reason, the volume is again reduced in tempering. Steels alloyed with chromium or nickel do not show such large changes in volume as the pure carbon steels do, so that in the former the danger of hardness cracks is not great. Since martensite occupies the largest volume, the formation of martensite is stimulated by pressure. For this reason pure martensite also can be seen on the edges of heavier pieces; then follows a layer of troostite, while in the center, due to the greater pressure at this place, martensite needles again appear.

On account of its great brittleness the martensitic structure is not suitable for cutting tools; therefore, all tools have to be tempered after hardening. Formerly, the degree of hardening was judged from the tempering color, a procedure still in use today for individual production; in mass production tempering is effected in special tempering furnaces in an air, oil, salt or metal bath, the temperature and tempering time being held within close limits. On tools such as axes, working under blows, the edges would break off if they were hardened only. The edges must, therefore, be tempered to such a degree that sufficient hardness remains, but at the same time sufficient tenacity is obtained. For the same reason, springs usually are tempered so that they assume a sorbitic or refined structure.

Implement Exports Set New High Record

United States exports of agricultural implements in the first eleven months of 1928 reached a value of more than $107,000,000, a figure never yet reached in any full calendar year, a report issued by the department of commerce reveals. Shipments during November were more than $1,000,000 greater than those of the preceding month and $2,000,000 above the exports of November, 1927.

Although tractor exports during November were larger they failed to reach the figure either of the preceding month or of November, 1927. It is pointed out that October shipments of tractors were unusually high, comprising more than half the total implement shipments for that month.

Boston Chapter Meets

A practical demonstration of a gas-fired, automatically controlled, high temperature furnace was witnessed by those attending the January meeting of the Boston chapter of the American Society for Steel Treating, Jan. 4 at the assembly hall of the Boston Consolidated Gas Co., Boston. As a further feature of the program Dr. Victor O. Homerberg, assistant professor of physical metallurgy, Massachusetts Institute of Technology, Cambridge, Mass., spoke on "Nitralloy Steels and the Nitriding Process." L. B. Crossman was in charge of arrangements for the meeting.

Dismantle Fannie Stack

The M. A. Hanna Co., Cleveland, has sold its Fannie blast furnace stack at West Middlesex, Pa., to the Contracting Machinery & Supply Co., Pittsburgh, which will dismantle it. The stack, originally built in 1873, was last rebuilt in 1918 and relined in 1920. For some time it has been inactive. Its annual capacity was 135,000 tons.

The addition to the Hamilton, Ont., plant of the Wallace Barnes Co. Ltd., subsidiary of the Wallace Barnes Co., Bristol, Conn., now nearing completion, practically triples its floor space and capacity. It manufactures wire and steel springs, screw machine products. etc.

Contrasts Operation of Pilger and Plug Type Tube Mills

Maximum Length and Wall Thickness Are Factors in Considering Advantages of the Two Processes from Stand-Point of Output and Costs

By Ewald Roeber

A FAIR comparison of the pilger process with the plug mill process must be based on equal tube diameters, equal wall thickness, the number of tons rolled and equal economic conditions. Unfortunately these data are lacking. A comparison based on the respective numbers of tubes rolled is out of the question because the plug mill produces lengths up to 39 feet 5 inches and the pilger mill up to 98½ feet. Small pipes of 2.36 inches diameter can be made up to 39 feet 5 inches long on the pilger mill but only 19¾ to 23 feet on the plug mill. Furthermore, the wall thickness of the pilgered tubes in most cases is less than that of tubes made on the plug mill, which must be remembered when considering the output in tonnage as follows:

1. According to Stiefel at a plug mill for tubes over 5 inches diameter 200,000 tons a year or 28 tons an hour based on three 8-hour turns (assuming tubes 8 inches diameter as an average).
2. The daily output of a plug mill about the middle of 1927, 8 inches diameter amounted to 1950 pieces or 925 tons in three 8-hour shifts, wall thickness 0.39-inch and length of tube 32 feet 10 inches.
3. The pilger mill plant at Allenport, Pa. was designed for a 10-hour output of 150 tons of tubes ranging from 5.90 to 11.81 inches diameter. In 1926 this mill produced in 10 hours 200 to 250 tons of tubes from 7⅝ to 8⅝ inches diameter and 0.31-inch wall thickness.

With pipes about 8 inches diameter the following tonnage was attained by the three mills just mentioned, based on 300 working days of three 8-hour turns each:

Type mill	Hourly output, tons	Annual output, tons
Plug mill, No. 1	28	200,000
Plug mill, No. 2	38.5	275,000
Pilger mill	22	160,000

Expressed in tonnage the production of the first plug mill is only about 27 per cent higher and that of the second plug mill about 75 per cent higher than that of the pilger mill. At equal wall thicknesses the difference is less pronounced.

The pilger mill fares considerably better when comparing the production in feet. With tubing 8 inches diameter the comparison is as follows:

Plug mill No. 1 with 0.39-inch wall thickness about 1940 feet an hour equivalent to 59 tubes each 32 feet 10 inches long.

Plug mill No. 2 with 0.39-inch wall thickness about 2800 feet an hour equivalent to 85 tubes each 32 feet 10 inches long.

Pilger mill with 0.315-inch wall thickness about 1870 feet an hour equivalent to 19 tubes each 98½ feet long.

Plug mill No. 1 produces only 70 feet or 4 per cent an hour more than the pilger mill and plug mill No. 2 about 930 feet or about 50 per cent more. With 0.315-inch wall thickness the plug mill could not attain the stated production. Consequently, with equal wall thicknesses the production of the pilger mill would be better in proportion than stated. In Germany tubes 8 inches diameter are made with a wall thickness of 0.216 and 0.256-inch.

Outputs not Comparable

In case of tubes from 2.36 to 4.92 inches the pilger mill is more profitable than the plug mill. It would not be fair to draw a parallel between an up-to-date plug mill of largest capacity, such as 300 tubes of 2.36 inches diameter with a wall thickness of 0.118-inch and a length of 19.7 to 23 feet rolled on two stands at the rate of 6400 feet an hour, with an antiquated pilger mill not working up to capacity. Two years ago 140 tubes of 2.36 inches diameter and a wall thickness of 0.011 and 0.098-inch were produced on a 4-stand pilger mill; with a tube length of 32.8 feet this means 4600 feet an hour. This does not represent a peak production for the pilger process; the writer considers an output of 6550 feet on a 4-stand mill not too high, provided the mill is in proper working order.

More important in contrasting capacities is a comparison of production costs for tubes made by the two methods. The price of the round ingots used for piercing is of particular interest. Both Stiefel and Wharton have mentioned that the plug mill process requires steel of exceptionally good quality because the piercing mill in this case has to roll down to a wall thickness of considerably less than required by the pilger process. The price difference between the two grades of steel, according to European conditions, is so high that it cannot be offset by any saving in the cost of handling which may have existed. On the contrary, it must be anticipated that the supply of mandrel bars of the requisite quality for new plug mills will offer considerable difficulties.

The pilgered tubes do not have to undergo a special reeling operation. The pilger knots formed in the process are removed in the sizing mill or at the drawbench after a slight reheating. On the other hand the tubes coming from the plug mill must be smoothed at the reeling mill on account of the scores, and then calibrated at the sizing mill. Small boiler tubes with an 0.098-inch wall are rolled and finished at the pilger mill, whereas at the plug mill they are rolled with an 0.118-inch wall and then cold drawn to 0.098-inch. This cold drawing increases production costs of small boiler tubes made at the plug mill particularly through the inherent scrap losses.

If pilgered tubes 8 inches diameter and 0.315-inch wall thickness are sold at the same price per foot as plug mill tubes 8 inches diameter and an 0.39-inch wall, then the pilgered tube commands a higher price a thou-

From a discussion in the Sept. 6 issue of *Stahl und Eisen* of a paper entitled "The Manufacture of Seamless Tubes" by R. C. Stiefel and G. A. Pugh which was presented at the Spring meeting of the American Society of Mechanical Engineers, Pittsburgh, May 14-17. The author, Ewald Roeber, is a consulting engineer, Duesseldorf, Germany.

sand. On the other hand, if the tubes are sold by weight, then the 0.315-inch tube is cheaper than that with an 0.39-inch wall. Since in most cases a tube of 0.216 to 0.256-inch wall would be sufficient, it is obvious that the lighter and cheaper tube would be preferred by the buyer. In both cases the pilgered tube is more profitable.

In reply to Stiefel's statements the writer wishes to submit the following:

1. Production of the plug mill, figured in tonnage, is only slightly higher than that of a modern pilger mill in case of thicker walled tubes. If the wall thickness is equal the production of the plug mill is not higher.
2. Investment cost is about the same with both methods.
3. Cost for rolls and mandrels and the maintenance cost of the plant are part of the costs with both methods.
4. Production costs with the plug mill are not more favorable than with the pilger mill.
5. Raw material for the plug mill must be of better grade than for the pilger mill and consequently is more expensive.
6. Plug mill tubes must be smoothed and sized, whereas sizing only is sufficient for the pilgered tube.
7. The thinnest wall obtainable with the plug mill is thicker than with the pilger mill.
8. Sales conditions for the tube made at the plug mill are less favorable than for the pilgered tube.
9. Tube lengths obtainable at the plug mill usually are shorter, up to about 39½ feet, than with the pilger mill which produces up to 98½ feet.
10. Tube diameters at the plug mill range from 2.36 to 13.97 inches; at the pilger mill from 1.57 to 25.59 inches inside.

The expanding mill previously was used by the Mannesmann and other works in Germany for expanding pilgered tubes from about 5¾ inches to 11.81 inches diameter but was replaced by a larger pilger mill. Since it is difficult to roll tubes exceeding 13.98 inches diameter at the plug mill, the expanding mill no doubt will be a welcome addition. The tubes are expanded in a way similar to the piercing process by 70 per cent in case of an expansion from 13.78 to 23.62 inches. Consequently, this plug and expansion mill process required round ingots of particular quality, which in my opinion, must be better than those so far used in the plug mill process. For the rest it will be necessary to confirm the statements compiled on the strength of experiments by results obtained in practice.

The addition of the expanding mill to the pilger mill would be of no advantage as long as diameter and wall thicknesses are involved which still may be attainable with the pilger mill since the tubular body rolled at the pilger mill needs no extra wall thickness to preserve the material and the limitation in the use of mandrels and rolls would mean no economy.

Lengthens Anchor Bolts in Bridge Piers by Unusual Welding Method

IN CONNECTION with the recent construction of a large highway bridge, anchor bolts had been sunk 5 feet deep into concrete piers to support the main structural members of the bridge. Seven of these concrete footings had been formed, each with four bolts to which the bridge posts were ready to be attached, when it was discovered that the bolts were several inches too short.

The expense of tearing out the concrete piers and forming new ones with longer bolts made this procedure prohibitive. Coring out around the bolts deep enough to sink new ones properly was considered to be nearly as costly and not as satisfactory. The decision was reached finally to cut off the threaded bolt ends and weld on new lengths to give the desired extension.

The oxyacetylene cutting blowpipe was used to remove the threaded portion of each bolt. Then the remaining section of each bolt was beveled with the cutting blowpipe to 45 degrees, the same being done on the unthreaded end of each extension piece. The final step was to weld the extensions to the stumps, as shown in the accompanying illustration. In doing this, a reinforcement of ⅛-inch was built up around the joint. This assured satisfactory strength and did not interfere with the function of the bolt, since the holes in the column bases were somewhat oversize. The job was accomplished in less than three days by a welder and helper.

Estimate 5 Per Cent Gain in Car Needs

Carload shipment of 29 principal commodities in the first quarter of 1929 will require 8,048,075 freight cars, an increase of 373,569 cars or 4.9 per cent over the first quarter of 1928, states the car service division of the American Railway association. This figure is based upon estimates made by shippers through the shippers' regional advisory board. Of the 13 regional advisory boards, 10 anticipate an increase in their requirements in the first quarter. Where decreases are scheduled, seasonal reasons are ascribed.

In the first quarter it is estimated that shipments of iron and steel will require 442,844 freight cars, an increase of 5.4 per cent over the first quarter of 1928; for machinery and boilers 49,912 cars, an increase of 8.9 per cent; for automobiles 300,622 cars, an increase of 28.1 per cent; for coal and coke 2,953,917 cars, an increase of 5.3 per cent; and for agricultural implements 31,418 cars, an increase of 8.6 per cent.

James J. Gallery, Donner Steel Co., Buffalo, was recently elected president of the Buffalo Safety club.

Announce Plans for Chicago A. F. A. Convention

Chicago's Loop and Lakefront Typifies the Architecture of the New World

PRELIMINARY announcement of the plans and program for the Chicago convention and exhibit of the American Foundrymen's association, to be held April 8 to 11, 1929, indicates that the event not only will be most interesting and profitable for the foundrymen of America, but also will differ in many ways from any meeting of the association in recent years.

All activities of the week including registration, technical sessions, dinners, banquets, and exhibits, will be in the new Hotel Stevens. All technical meetings will be on the third floor, with ample accommodations for simultaneous sessions. Registration headquarters and exhibits will be on the basement level, one flight down from the main lobby. With all events in a single hotel, members and guests may attend the meetings and inspect the exhibits without the inconvenience and loss of time occurring when activities are scattered.

While exhibits will be limited as to space occupied, they promise to be as interesting as ever in character. Practically all of the regular exhibitors at the annual conventions will participate.

As now planned the program provides little opportunity for general entertainment for the men, but the usual entertainment for ladies will be arranged. The annual exhibitors' dinner will be held on Monday evening and on Tuesday evening there will be a general session on foundry sands, preceded by a special dinner on the third floor. On Wednesday evening the annual banquet—the principal social event of the convention—will be held. The usual provisions for plant visitation will be made under the auspices of committees of Chicago foundrymen.

The tentative general program appears elsewhere on this page.

The shop operation course on cupola practice proved so successful at the Philadelphia convention that the committee has decided to broaden this type of meeting and conduct courses for the gray iron foundrymen and the steel foundrymen at the coming convention. Each course will consist of four meetings and instructions in the fundamentals of shop practice will be given.

Round table meetings permitting of informal discussion of shop problems have proved so successful in the malleable and nonferrous branches that a similar meeting is being arranged for steel foundrymen. At these meetings, members present are privileged to ask for discussion on any topic which they wish to introduce.

Foreman training, a subject of increasing importance to foundrymen, will be given a place on the program. Several men prominent in foreman training have been secured to discuss how training programs can be made worth while. Among those who will participate are A. B. Pierce, director, department of industrial education, National Metal Trades association, Chicago; M. H. Mellen, superintendent of education, General Electric Co., West Lynn, Mass.; A. D. Lynch, director of personnel, Ohio Brass Co.,

Tentative Convention Program

Monday, April 8

10:00 a.m. Registration
Exhibits Open
2:00 p.m. Committee Meetings
4:00 p.m. Cast Iron and Steel Founding Shop
Operation Courses

Tuesday, April 9

10:00 a.m. Foundry Costs
Steel Founding
Iron Founding
12:30 p.m. Round Table Nonferrous Cost Methods
Round Table—Steel Founding
4:00 p.m. Sand Control
6:00 p.m. Dinner gathering of those interested in sand control.
7:00 p.m. Foundry Sands

Wednesday, April 10

10:00 a.m. Nonferrous Founding
Cast Iron Research
Materials Handling
12:30 p.m. Round Table—Nonferrous Shop Practice
2:00 p.m. Foreman Training
4:00 p.m. Cast Iron and Steel Founding Shop
Operation Courses

Thursday, April 11

10:00 a.m. Malleable Iron
Apprentice Training
12:30 p.m. Round Table Malleable Founding
2:00 p.m. High Test Cast Iron
4:00 p.m. Cast Iron and Steel Founding Shop
Operation Courses

Mansfield, O.; W. F. Coleman, W. A. Jones Foundry & Machine Co., Chicago; and L. A Hartley, director of education, National Founders' association, Chicago

Will Discuss Apprentices

The why and the how of foundry apprentices will be discussed at a session on training foundry apprentices. J. A. Davies, general superintendent, Philadelphia branch of the Westinghouse Electric & Mfg. Co. will explain the why and A. M. Cornell, vice president, Pettibone-Mulliken Co., Chicago, will show how training can be carried on.

Inasmuch as cost methods for gray iron, steel, and malleable foundries have been given prominence at past American Foundrymen's association meetings, the program this year calls for a consideration of ways and means of getting the nonferrous foundry operators to consider the use of a uniform cost finding method. Following the regular cost session, those interested in nonferrous costs will assemble at a luncheon meeting.

Breaking a precedent of many years' standing, the association will hold a technical session in the evening. Sand control is the subject of this session. The evening meeting was scheduled in order that all who are interested might attend without conflicting with their attendance at other sessions. Preceding the evening session, a meeting on sand control will be held at 4:00 p. m., which will be for the purpose of explaining the fundamentals of sand control.

The usual technical and shop practice sessions will be held covering developments in the iron, steel, malleable and nonferrous branches of the industry.

Announce Prize Winners

The board of awards announces that the committee appointed to select the three 1928 (Philadelphia) convention papers, the authors of which are to receive $100 cash prizes, have selected the following:

"Temperature Measurements of Molten Cast Iron," by H. T. Wensel and W. F. Roeser, associate physicists, pyrometry section, U. S. bureau of standards, Washington.

"The Effects of Lead on the Properties of a Complex Brass," by O. W. Ellis, metallurgical engineer, Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

"Reducing New Sand Consumption in a Steel Foundry," by H. A. Mason, assistant to superintendent, Gould Coupler Co., Depew, N. Y.

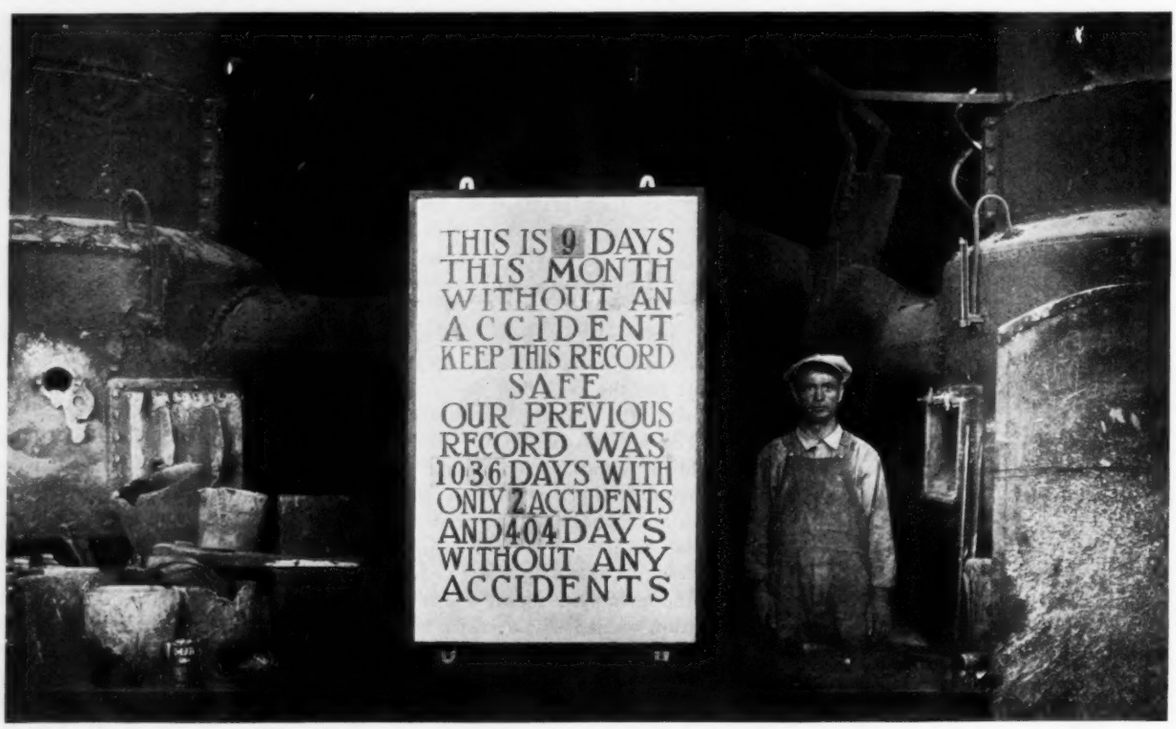
The board announces that the prizes will be presented at the 1929 convention and that similar prizes for papers presented at that convention will be awarded. The plan as approved provides for three prizes of $100 each for papers presented on any of the following subjects: gray iron, steel, malleable, non-ferrous, sand control, and general foundry practice. Only one paper in any class will be awarded a prize.

Builds New Forge Plant

New Departure Mfg. Co., Bristol, Conn., has completed an addition to its forge plant, 126 x 200 feet. It houses 12 heavy-duty forging machines, one of which is of unusual size. It is served by two cranes of 10-ton capacity. The addition will increase production of ball bearings by about 10 per cent.

Utah Foundry Has Enviable Record

THAT the hazard incident to foundry operation may be minimized to a considerable degree has been demonstrated in a highly gratifying manner in the foundry of the Utah Copper Co., Garfield, Utah, under the direction of T. F. Jennings. The reproduction of a large placard shows that 9 days of the current month have passed without an accident. Attention is directed to the fact that only two accidents occurred during a period of 1036 working days and that at one period, 404 consecutive days passed without any accident.



Helpful and Deterrent Influences Face European Steel Industry

German Wage Dispute Still Unsettled—British De-rating Plan Promises Some Relief—French Producers To Increase Capacity

By Vincent Delport
European Manager, Iron Trade Review

EVENTS of importance occurred in two of the leading iron and steel producing nations of Europe during the last quarter of 1928, the Ruhr stoppage in Germany and the partial establishment of the derating scheme in Great Britain. France and Belgium ended the year in prosperous conditions. The situation of Poland, Czecho-Slovakia and central Europe generally was satisfactory, while an improvement was registered in the Italian trade.

A year ago, in December, 1927, serious disturbances already were threatening in the German Rhenish-Westphalian iron and steel district, owing to the reduction of working hours and increases in wages, which were made compulsory by the German court of arbitration. At that time the German iron and steel industries were operating under prosperous conditions, and the steelmasters, following an ineffectual appeal to the government to put off, or to alleviate, the new terms, accepted the arbitration, thus avoiding a costly stoppage. The wages agreements expired Dec. 31, 1928. Before the date of expiration the workers' representatives applied for certain increases to be included in the new agreement. The employers rejected this demand, but the labor court of arbitration decided in favor of the workers. The employers claimed that the decision was illegal, that the industry could not bear the extra burden, and decided to close their works from Nov. 1, which they did. The subject was referred to the labor court at Duisburg, which declared that the arbitration award was not legal, thus giving reason to the employers. The workers' representatives appealed, and the next decision was in their favor, declaring that the lock-out was illegal. Finally, the employers brought the case before the central tribunal of Leipzig. In the meantime, about 230,000 men employed in the metal industries were out of work, and 60 to 70 per cent of blast furnaces, steelworks and rolling mills of the Ruhr district were damped or ceased to operate. These conditions endured through November. Sunday, Dec. 2, the government proposed that Herr Severing, socialist minister of the interior, should be appoitned arbitrator, on the understanding that his decision would be accepted as final and without reservation by both parties. This solution was accepted and, pending the decision of Herr Severing, work gradually was resumed under the old terms.

Some light is thrown on the attitude of the employers by the fact that substantial wage increases have been granted the workers since 1926. The basis rate of wages for skilled workmen increased by an average of 11.4 per cent between Jan. 1, 1926, and June 30, 1928, while for unskilled workers the increase was 9.1 per cent; but it is pointed out that the increase in actual wages worked out at a higher percentage than the theoretical rate mentioned above. In August, 1928, the average wage of the man employed in the steelworks of Vereinigte Stahlwerke, A. G., was 231 marks ($55) per month, as compared with 218 marks ($52) in December, 1927, showing that wages increased in the course of the year.

These increases made a considerable difference in production costs, and it is claimed that economies realized in the works by various processes of rationalization have been practically balanced by the higher costs due to enlarged pay-rolls and shorter working days. Then again, 1928 was not so prosperous for Germany as the preceding year, especially with regard to domestic business. Export trade improved, but export prices were uneconomical to German works until a higher level was reached at the end of the year. With regard to production, had the Ruhr stoppage been avoided, it can be estimated that the output of steel last year would have averaged 15,500,000 metric tons, as compared with 16,310,000 tons in 1927; in fact, the 1928 output was only about 14,000,000 tons. With the beginning of the new year, work in the German metallurgical industries

Cold rolls at Grovesend Works of Richard Thomas & Co. Ltd., England

is beginning afresh and will be intensified by the volume of business held back during the lockout. The outlook, however, is uncertain, partly because of the insufficiency of working capital. If the decision of the arbiter is in favor of the workmen, it seems that the steelmakers will ask the government to let them increase the domestic price of steel to cover the increased cost. This would react on the consuming industries. If the award is against an increase of wages, the industries may hope to derive the full benefit of their efforts toward economy. A more aggressive export policy also can be anticipated.

Pig Iron Output Lower

The year 1928 has brought no improvement to the iron and steel and other heavy trades of Great Britain. Unemployment figures were higher than a year previously, the number of persons on the registers of employment exchanges being 1,350,800 Dec. 3, 1928, as compared with 1,149,648 on Dec. 5, 1927. Only 136 blast furnace stacks were operating Oct. 31, against 162 the same date in 1927. Production of pig iron during the first ten months of 1928 was 5,526,500 tons, compared with 6,148,600 tons in the corresponding period of 1927, and the output of steel was 7,079,500 tons and 7,795,300 tons respectively. Foreign trade figures, however, improved, especially in imports of iron and steel, which decreased from 3,840,841 tons in the ten months ending Oct. 31, 1927, to 2,479,492 tons in the corresponding period last year. Exports slightly increased from 3,448,886 tons to 3,503,123 tons. Prices, on the other hand, were hardly satisfactory, and in some cases did not cover costs. The financial situation of several leading concerns improved, but this was mostly due to drastic reorganization and the writing off of considerable amounts. Thus, the picture of the British iron and steel trade at the end of 1928 is no brighter than it was at the beginning, and any hopes that prevailed at that time did not materialize. One considerable change, however, has been brought about by government initiative, which may be of real assistance to the industry.

The de-rating scheme, which was mentioned when Winston Churchill, chancellor of the exchequer, presented his budget, has for its primary purpose to relieve the productive industries from the burden of local rates. The government bill provides for a reduction of 75 per cent of the rates for productive industries and the complete suppression of rates for agriculture. The local authorities will receive a grant from the central authority to make up for the loss of revenue. The full effect of the bill is not to come into force until Oct. 1, 1929. However, the relief was made available to the transport undertakings as from Dec. 1, 1928, on the condition that the full benefit would be passed on to agriculture, coal, iron and steel in the form of reduced freight rates. With regard to the coal industry, only coal for export or coal for iron and steel works will have the advantage of the lower freight rate. It is not possible to measure the extent of the relief to iron and steel now that the scheme is only partially in force, but it is computed that when complete relief is given the average reduction of production cost on one ton of steel over the whole country will be about 4s ($0.97), and it is pointed out that many export orders have been lost in the past owing to a smaller margin. The coming year probably will also see further amalgamation among leading iron and steel concerns, and hopes for an improvement have a more solid foundation than in the past.

The French iron and steel industry has attained a degree of prosperity unequaled since the war. The output of steel ingots and castings for the first ten months of 1928 was 7,767,000 metric tons, compared with 6,857,000 tons in the corresponding period of 1927. The highest monthly figure on record was reached in October with 834,000 tons. Oct. 31 there were 150 blast furnaces blowing, against 144 at the beginning of the year. These results were mostly due to the activities of domestic business, because foreign trade returns show that exports have fallen off. Prices generally were remunerative and achieved a degree of stability.

A crisis nearly occurred in November when the Poincare cabinet was overthrown owing to a party manoeuvre. It is characteristic that the majority of French public opinion demanded the return of M. Poincare at the head of the government, and his return prevented a disruption of business conditions. Industrial leaders have placed their confidence in the man who re-established the financial stability of the country, and they are not prepared to experiment on new schemes after having seen prosperity gradually building up under the Poincare policy. In France, perhaps more than in any other country, trade is more susceptible to political changes.

At the beginning of December practically all the French iron and steel works were operating to capacity. Deliveries extended over several months and prices were near their highest levels. New business, however, was quieting down. This was partly due to the return of the Ruhr district to normal conditions, and partly to the fact that consumers probably had overstocked during the period of rising prices. Iron and steel quotations reached a level which they are not expected to exceed, because the transforming industries would limit their inquiries if prices were higher, while on export markets the French would lose the advantage over their competitors if they forced their quotations higher. It is probable that the level will slightly drop and then become stabilized for a period. A number of important concerns are planning to increase their capacity of production, and this is causing dismay in certain quarters, because even now France must export about 50 per cent of her output. It is hoped, however, that domestic consumption will expand, and the outlook is decidedly optimistic.

Export Trade Flourishes

In Belgium and Luxemburg conditions have been good, and export business, which is the mainspring of those countries' prosperity, has been flourishing, although the Ruhr stoppage did not intensify Belgian and Luxemburg exports to the extent that was anticipated. However, the markets, up to December, had been active and prices attractive to makers, with the result that order books were comfortably filled and the producers can afford to wait until 1929 business begins to materialize without breaking prices. For both countries, iron and steel production in 1928 exceeded the tonnage of any previous year.

The situation in Poland has further improved. The trade deficit was

Comparative Business in European Nations

Good—*Holland, Belgium, Luxemburg France, Czecho-Slovakia, Switzerland.*

Fair to Good—*Esthonia, Poland, Austria, Yugo-Slavia.*

Fair—*Norway, Sweden, Finland, Latvia, Lithuania, Germany, Denmark, Spain, Italy, Hungary, Rumania, Bulgaria.*

Poor to Fair—*Great Britain, Greece, Turkey.*

Poor—*Portugal, Albania.*

Undetermined—*Russia.*

greatly reduced in October and reached the lowest figure since November, 1927. A review of general economic conditions of the country given in the annual report of Hauts Fourneaux et Usines d'Ostrowiec, one of the leading iron and steel concerns in Poland, shows that considerable progress has been made since 1926. The revenue of the state-owned railroad exceeds the expenses; stability of currency seems to be assured; bank deposits are increasing and credit is more abundant; unemployment is decreasing and production of the various industries is on the increase. The output of iron and steel for 1928 will exceed that of previous years. Late in the year the pig iron syndicate ordered 79,000 tons from the blast furnaces, which constitutes a record. The works are increasing their productive capacity and, apart from the building of locomotives, most transforming industries are satisfactorily occupied.

Czech Steel Plants Busy

The steel industry in Czecho-Slovakia is operating at full capacity and has orders on its books for months ahead. The number of workmen employed in the principal steelworks is on the increase. Export business was expanding as the year drew to a close and domestic trade was active as well and hardly gave way to the usual seasonal influences. In Austria the Alpine Montangesellschaft has been busy and received considerable rail orders, not only till the end of 1928 but also for the next year or two. The iron ore output and iron and steel production have attained record figures. Exports of iron and steel, and industrial products generally, from Yugo-Slavia also have progressed, and there are schemes for many new enterprises which will act as an incentive to industry.

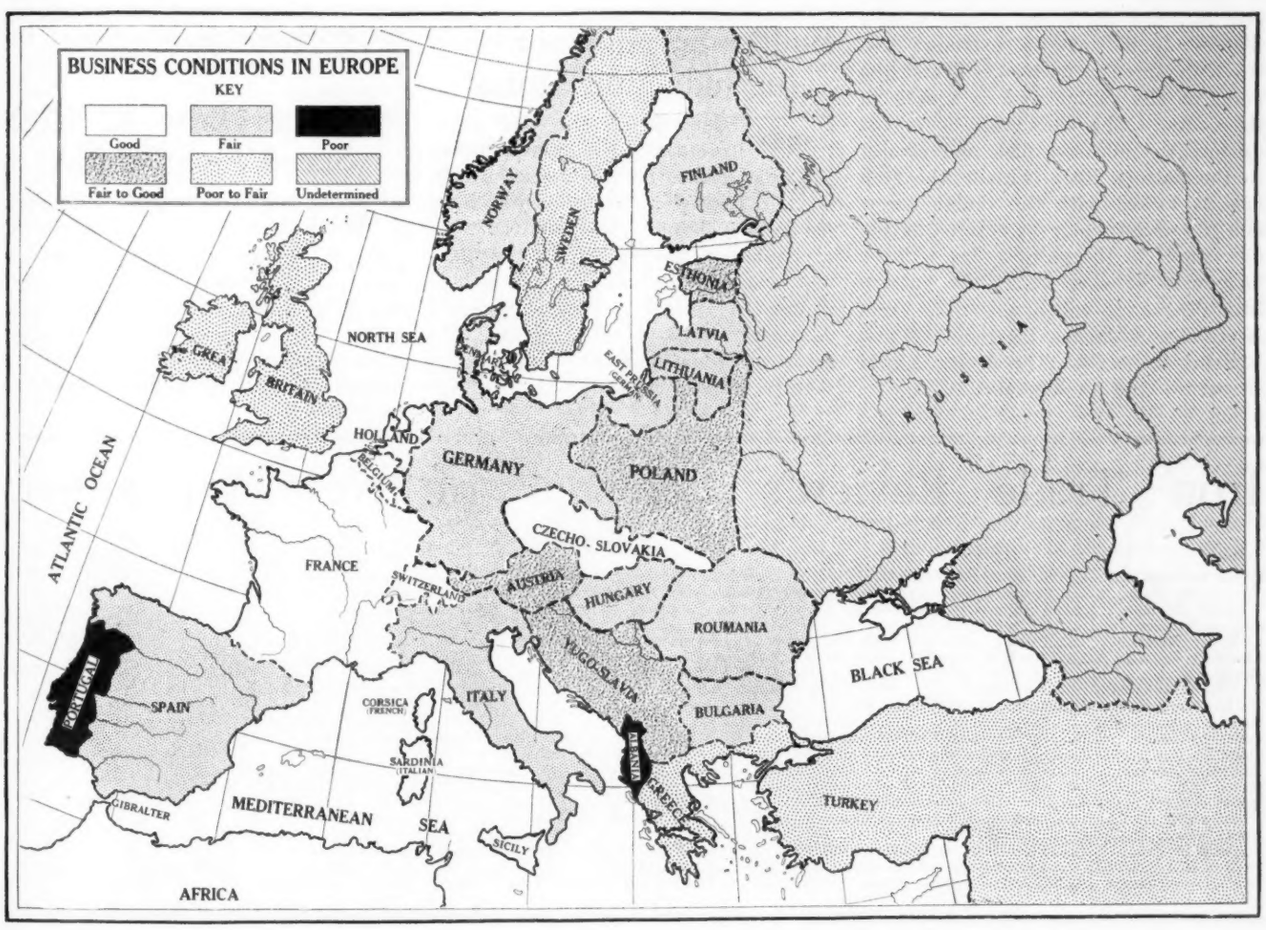
The despondency which had characterized Italian trade during several months now shows signs of being overcome. What may be considered as a barometer of Italian prosperity is the output of electrical energy which, from Jan. 1 to Aug. 31, 1928, totaled 5,370,000,000 kilowatt-hours, against 4,829,000,000 in the corresponding period of 1927. Unemployment has decreased and there is a growing tendency toward the formation of new companies. From September to the end of the year Italian iron and steel works were active, partly owing to important industrial orders received through the agency of the government. In Spain, the authorities are taking measures to further protect home industries, and a new tariff is being prepared. Its enforcement has been postponed until Jan. 1, 1930, but considerable increases are anticipated and iron and steel will be among those products that will be marked up. The iron and steel industry of Sweden has shown signs of picking up, especially in finished products. The effects of the long drawn-out strike of the iron ore mines are passing and better conditions are expected in 1929, provided that there be no more labor disputes.

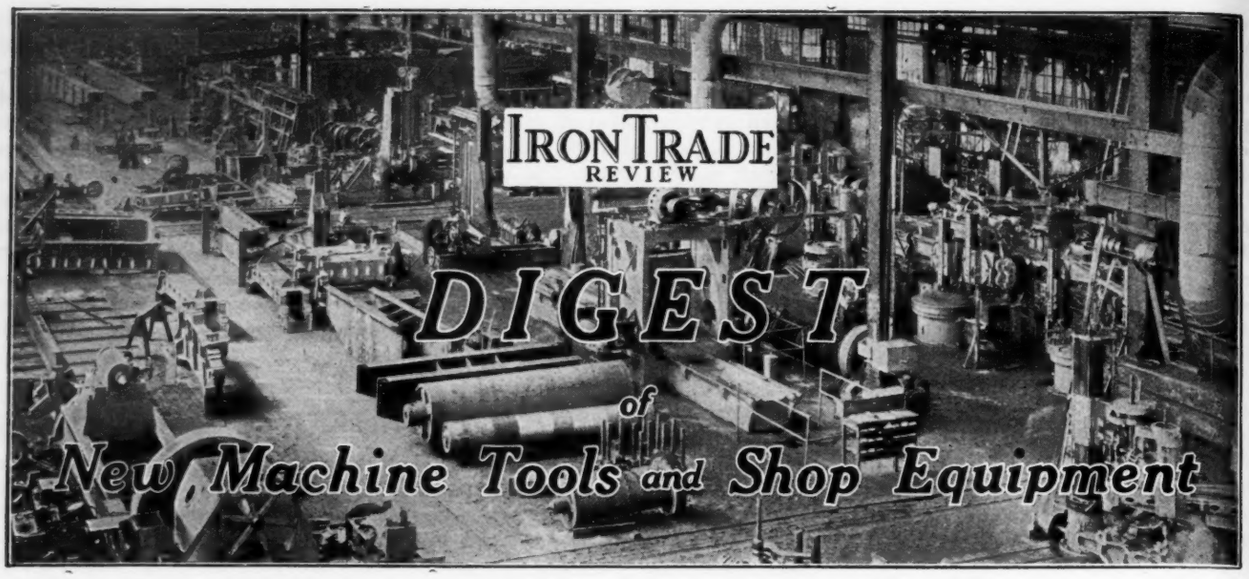
Sees Good Steel Earnings

"For the steel industry as a whole I expect to see the improvement in earnings and increased stability of prices which appeared in 1928 to continue manifest in 1929," states F. J. Griffiths, chairman, Central Alloy Steel Corp., Massillon, O.

Markets for the Central corporation's special products are expanding, according to Mr. Griffiths. In the first week of January the corporation operated at 90 per cent. Heavy releases of tonnage for early shipment are reported.

Southern Pacific railroad has appropriated $2,500,000 for completing its block-signal system.

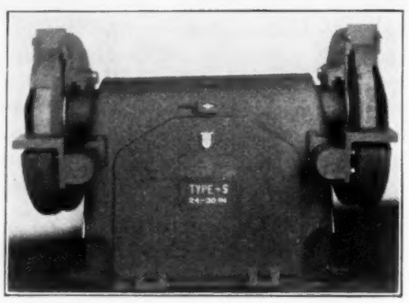




Circle Generating Gage Simple in Operation

No. 1

Porter-Cable Machine Co., Syracuse, N. Y., has designed a new core print or circle generating gage for making core prints, bosses and taper work in connection with an abrasive disk. The gage consists of a base which slides in the slot on the table of the grinding disk, a stop arm with a thumb screw which locks the stop arm in place and a radius arm with a piercing point at its extreme end. When the circular pattern is drawn the point of the radius arm is placed in the center. The work then is moved against the abrasive disk and sanded to the pattern line. Finally the stop arm is locked with the thumb screw and the pattern may be rotated as the disk sands to the pattern line without danger of sanding inside the pattern line. The gage will handle work from ⅛-inch to 5 inches in diameter and 2 inches in height. The device is said to permit fast production.



No. 3—High speed floor stand

Builds Speed Controller for Induction Motor

No. 2

General Electric Co., Schenectady, N. Y., recently has placed on the market a new speed controller for slip-ring induction motors. The controller is applicable to motors driving ventilating fans, blowers and other machines where the amount of torque required decreases as the speed is reduced. The device provides overload and undervoltage protection and will give approximately 50 per cent speed reduction by inserting resistance in the rotor circuit. Each controller consists of a line contactor, a temperature overload relay, a secondary dial switch operated from the outside of the cover, a resistor and a push-button starting and stopping control. The sheet steel enclosing case is ventilated and provided with knockouts in the top and bottom. In operation, the line contactor is closed by the push button control, thus starting the motor. Speed regulation is obtained by moving the dial switch arm on the front of the enclosing case.

Motor in Base of High Speed Floor Stand

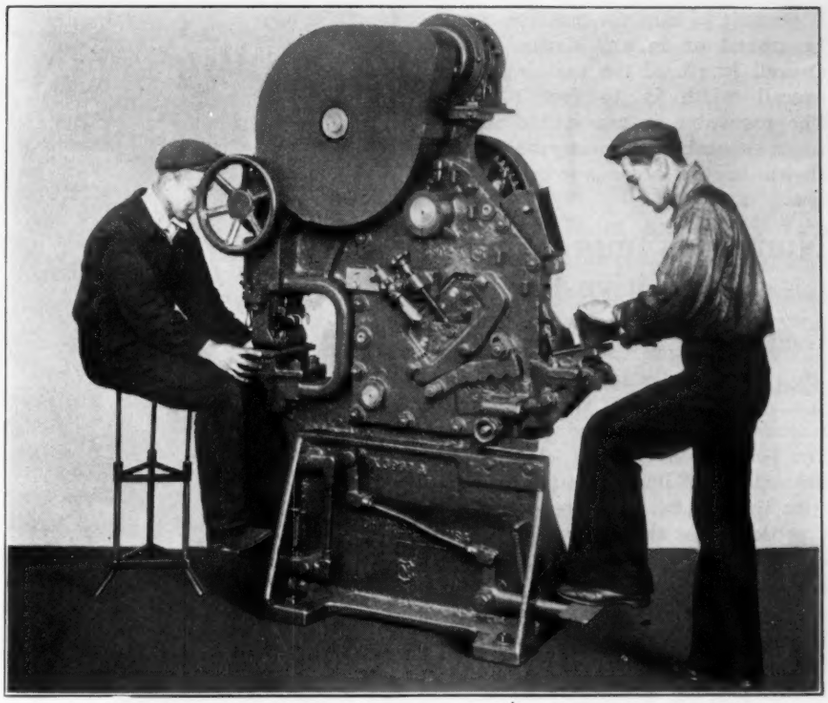
No. 3

Norton Co., Worcester, Mass., recently has offered to the market a combination high speed floor stand that can be equipped with hoods for using either 24-inch or 30-inch diameter grinding wheels. The design hinges around the use of a motor mounted

Iron Trade Review's Calendar of New Equipment

Item	Comment	Builder	No.	Date Described	Page
Speed reducers	Single, double and triple series; antifriction bearings	Palmer-Bee Co.	284	Nov. 29	1386
Power shovels	Steam, electric and diesel-electric; 2 cubic yard capacity	Marion Steam Shovel Co.	285	Nov. 29	1386
Forging furnace	Automatic continuous vertical type	Marshall Blow Pipe Co.	286	Nov. 29	1387
Circuit breaker	Oil-type; for use in small installations	General Electric Co.	287	Nov. 29	1387
Cylinder finisher	Planes, bores and mills locomotive cylinder units	Morton Mfg. Co.	288	Dec. 6	1443
Coupling	Flexible, all-metal type for direct drives	T. L. Smith Co.	289	Dec. 6	1443
Goggles	Attached to adjustable skeleton cap or solid cap	Oxweld Acetylene Co.	290	Dec. 6	1443
Milling attachments	High-speed types; spindles in vertical plane	Brown & Sharpe Mfg. Co.	291	Dec. 6	1444
Brinell microscope	Image is projected onto ground glass screen	Paul F. Hermann Co.	292	Dec. 20	1567
Grinder attachments	Foot treadle switch; adjustable lights	Hisey-Wolf Machine Co.	293	Dec. 20	1567
Indexing tables	For jig borer; tilting and nontilting types	Pratt & Whitney Co.	294	Dec. 20	1568
Gage	Adjustable snap thread gage for external thread gaging	Taft-Peirce Mfg. Co.	295	Dec. 20	1568
Indicator devices	Detect heat in stored coal; sentinel and dial types	Coal Specialties Co.	296	Dec. 20	1568
Gage	Core print gage used with an abrasive disk	Porter-Cable Machine Co.	1	Jan. 10	140
Speed controller	For slip-ring induction motors; overload protection	General Electric Co.	2	Jan. 10	140
Floor stand	High speed; accommodates 24-inch or 30-inch wheels	Norton Co.	3	Jan. 10	140
Shear, punch and coper	Punches, shear, cuts, etc. on small sections	Joseph T. Ryerson & Son Inc.	4	Jan. 10	141
Excavator	Diesel engine powered; 3½ cubic yard capacity	Harnischfeger Corp.	5	Jan. 10	141
Drill	Vertical type of ⅞-inch capacity; belt or motor driven	Merit Equipment Corp.	6	Jan. 10	142
Welder-compressor	Gasoline engine driven welder and air compressor	Wilson Welder & Metals Co. Inc.	7	Jan. 10	142

in the base. Protection hoods are made of overlapping steel boiler-heads, ⅜-inch thick. They are hinged and movable to compensate for wheel wear, the movement being controlled by rack and pinion gears and a ratchet wrench. Locking the hoods in position or releasing for movement can be accomplished by means of a cam and lever. Adjustable combination spark deflectors and protection hoods for operators also are furnished. This makes it possible to control the degree of wheel exposure. Sheet metal exhaust connections are streamlined with the hoods. Work rests are supported from the base casting, as shown in the accompanying illustration, and are adjustable in two directions. Two double row adjustable ball bearings are provided for the spindle. Speeds are arranged to give 9000 surface feet per minute for new wheels. Multiple belts allowing three speed changes or a silent chain with no speed chain are the optional drives for the machine.

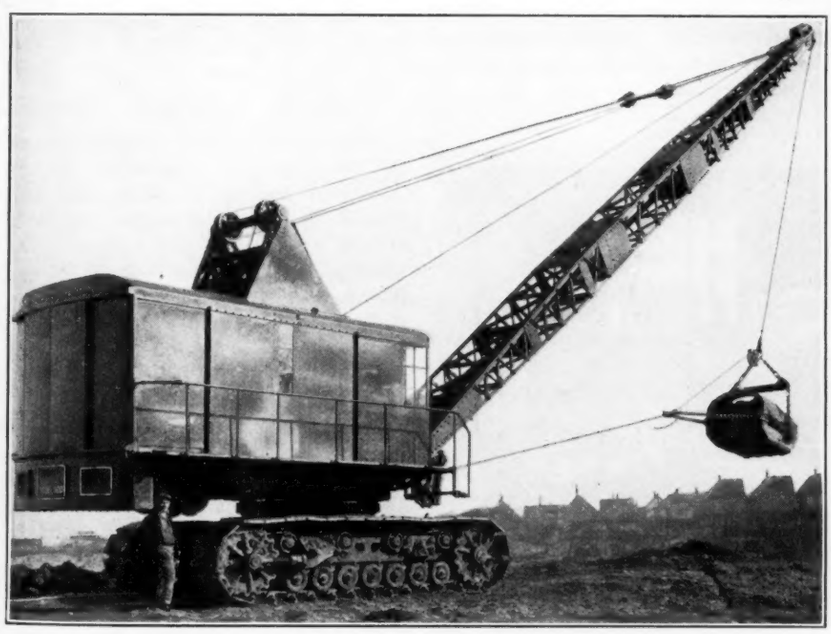


No. 4—Shear, punch and coper for small steel sections

Shear, Punch and Coper Handles Small Work

No. 4

Joseph T. Ryerson & Son Inc., Sixteenth and Rockwell streets, Chicago, announces the development of a combination shear, punch and coper of small size, capable of handling a varied class of work on the smaller steel sections. The one machine will perform punching, plate and bar shearing, angle and tee cutting, angle and tee mitering, coping and notching operations. The punch is of the deep-throat type. The shearing end of the machine is constructed so that a single slide handles the shearing of angles, bars, plates and coping. Bar cutting blades are located directly below the angle shear blades. These cutters consist of two blades only and will operate on both round and square sections. Plate shearing blades are located directly below the bar cutter. Plates of any width or length and up to ⅜-inch in thickness may be sheared. The coping device is built at the shear end of the machine and is extended out from the frame and located at a convenient height for operation. The drive of the machine is through all-steel gears to alloy steel eccentric shafts. Clutches are of the two-jaw type making possible their engagement every half revolution of the clutch gear. The working heights of the various attachments have been made such that the base of the machine can be placed on the floor, as shown in the accompanying illustration, thereby eliminating the necessity of building up a concrete pier for a base.



No. 5—Diesel powered excavator of 3½ cubic yard capacity

Large Size Excavator Is Diesel Powered

No. 5

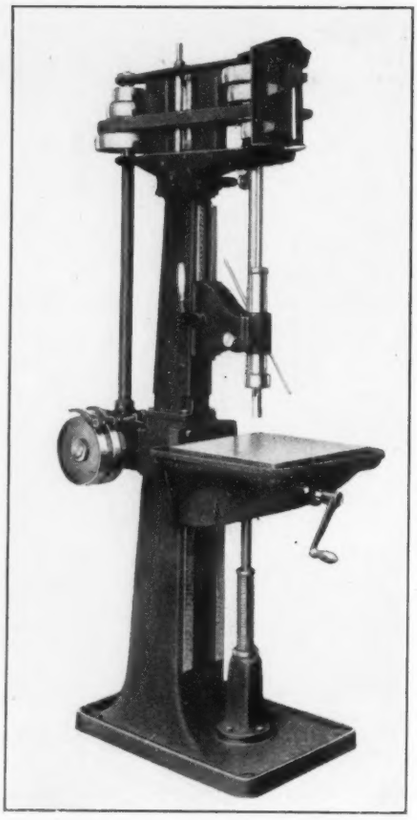
Harnischfeger Corp., Thirty-eighth and National avenues, Milwaukee, has added a new excavator of 3½ cubic yard capacity, powered by a 175-horsepower diesel engine, to its line of shovels, draglines and crawler cranes. The revolving frame of the unit weighs 17,000 pounds and has an overall length of 19 feet 6 inches. The main machinery as well as the four double sets of swiveled conical steel swing rollers which carry the weight of the revolving structure, are equipped throughout with roller bearings. The new machine is provided with a box girder shovel boom, outside dipper sticks, a 3½ cubic yard dipper and also a 3½ cubic yard bucket for dragline work. All gears of the traction mechanism are enclosed completely in heavy cast steel gear cases and run in a bath of oil. Steering brakes are provided making

it possible to turn the machine squarely around or in any desired radius. Overall length of the unit is 25 feet; overall width is 14 feet 6 inches. The excavator is convertible for use as a shovel, crane or dragline as shown in the accompanying illustration.

Numerous Improvements on Sensitive Drills

No. 6

Merit Equipment Corp., 6616 Morgan avenue, Cleveland, recently has introduced new models of vertical drilling machines, belt driven and motor driven. The belt driven type, as shown in the accompanying illustration, is provided with tight and loose pulleys, transmitting the power through a pair of steel hardened spiral bevel gears to a vertical shaft. The gears, running in oil, are enclosed in a dust proof gear box, forming a complete unit. The vertical driving shaft is enclosed in a steel tube. The top bracket forms a complete unit cast in one piece and braced in front and rear. This bracket forms the bearings for the front and rear cones and also houses the belt shifting mechanism and the automatic belt tension idler, each forming a separate unit. An endless flat belt is used to transmit the power from the rear drive shaft cone to the spindle cone. The belt shifter has two forks and is operated from the front of the machine through a small crank handle, one revolution for each speed. A guard plate on the front of the bracket indicates the proper speed for various size drills. Tension on the belt can be adjusted by means of a small handwheel directly under the bracket. The table is raised or lowered by a telescopic screw. The sliding head has a long adjustable spindle bearing and is clamped securely to the column by a single handle. The lever for hand feeding spindle is adjustable also. The machine has a ⅞-inch capacity and is furnished with from one to six spindles and hand or automatic power feed.

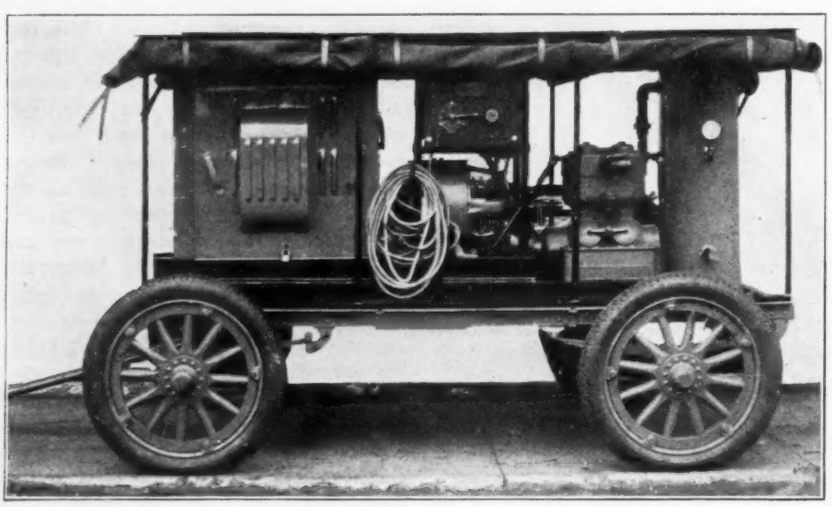


No. 6—Sensitive drill

Welder-Compressor Unit Gas Engine Driven

No. 7

Wilson Welder & Metals Co. Inc., Hoboken, N. J., announces the addition of a new machine to its line of special electric welding equipment. The unit is a gasoline engine driven welder combined with an air compressor. The apparatus is said to be especially convenient for those companies who perform welding operations outside their shops. Facilities for operating riveting machines, chipping machines and grinders are embodied in the portable unit which, as shown in the accompanying illustration, is equipped also with four pneumatic tires to facilitate travel over rough ground.



No. 7—Portable electric welder and air compresser

Gather Data on Strength of Plane Tubing

Additional data in graphical form on the strength of tubing used in airplane construction will soon be available for designers and engineers as the result of co-operative work of the bureau of standards and the bureau of aeronautics of the navy department, Washington.

Tubing is extensively used for the framework of airplanes, particularly the fuselage. The members of the structure carry compressive loads applied to the ends (acting as columns) and transverse loads (acting as beams), and sometimes carrying both kinds of loading.

The strength of tubing 1, 1½, and 2 inches in diameter made from duralumin and from chromium-molybdenum steel was found by experiments on tubes of different lengths, up to a slenderness ratio of 120. The column strength, the beam strength, and the strength under different combinations of compressive and transverse loading are being determined for each size of tube.

The results will be given in graphical form insofar as possible. Using these graphs an engineer can design structures which will be safe because he will know quite accurately the strength of the members.

Selects Atlantic City

Atlantic City, N. J., has been chosen by the executive committee of the American Society of Mechanical Engineers as the location for the 1929 annual meeting of the society. The meeting dates will be June 24-28 and the sessions will be held in Chalfonte-Haddon hall. Further details of the meeting will be available at a later date.

Engineering experiment station of the Unversity of Illinois, Urbana, Ill., has published as bulletin 187 the second part of a discussion on the surface tension of metals by Earl E. Libman, assistant professor of physics. It is entitled "A Determination of the Capillary Constant of Silver" and consists of 22 pages with numerous illustrations, charts and tables.

Editorials

Better Merchandising Aids Plate

TIN platemakers are starting a year that holds considerable promise. Conditions in the canmaking industry indicate that more tin plate will be required in the next 12 months than in 1928 to meet a deficiency that occurred in several packs the past year, in addition to accommodating the steady growth in use of tin plate containers. Adverse weather conditions held the 1928 pack of tomatoes, corn and peas to about 43,000,000 cases, or a million cases below the estimated annual consumption of these vegetables. A near sell-out, consequently impends.

Tin plate and can manufacturers have met with success in recent years in broadening their markets. More products are being sold today in tin plate containers than ever before. The activity of canners in improving the quality of canned foods has eliminated the distrust with which tin plate containers were viewed years ago. The old ptomaine poisoning bugaboo once associated with the use of canned foods has faded and an increasing volume of vegetables is finding its way into consumption via the canning factory rather than in the fresh state.

Tin plate manufacturers, assured of a steady demand for their product from canmakers, at least for the present, face the task of developing new sales outlets. Much work has been done in this direction and is reflected in the steady increase in tin plate production. The search for new uses confronts all departments of the steel industry, but the lighter flat-rolled products, because of their numerous applications, appear to offer the greatest possibilities for the effecting of broader and more active markets.

Will Rate Revision Open Markets?

STATEMENTS by various executives of western railroads express confidence in the possibility of a year of even greater prosperity, especially in the Middle West and Northwest territories. It is significant that the opinions of a number coincide in the view that the coming year will see an end to the postwar deflation, even in agriculture. Western railroad men are stressing the need of freight rates that will permit western roads to compete with Panama canal traffic without materially interfering with all intermediate rate structures.

The plea is made that a readjustment of rates to that end would benefit not only western manufacturing, but would also be of aid to the jobbing trade and agriculture, and that new markets would be opened up, which the western roads claim to have difficulty in reaching now on a competitive rate basis. The statement is made by one executive that problems of rate adjustment likely can be handled more easily about the conference table with railroad officials, business men, manufacturers and farmers participating. That method would have a most important advantage over rate meddling by congress. For one thing the matter of rates to Inter-Mountain territory would have to receive consideration.

Steel Also the Metal of Peace

WHEN the production in the United States, goaded by the war's requirements for munitions and ships, soared to 987 pounds per capita in 1917 it surpassed all previous records and set a mark which many thought would stand for years. Beginning with 1918, per capita consumption declined, scraping bottom with 409 pounds in 1921 and fluctuating since.

Yet 1928, with army and navy purchasing negligible, saw peacetime demands for steel rising to 959 pounds per capita, a pinnacle only topped by the war year 1917. And if 1929 consumption develops an increase of only 4 per cent, or one-quarter the gain of 1928 over 1927, even the 1917 record will go by the boards.

Not every man, woman and child last year purchased nearly a half ton of steel directly. Probably the automobile represented the most apparent link between producers and consumers. It is in mass outlets for steel, such as highways, office buildings, the railroads and pipe lines, spread over the entire population, that per capita use rises sharply.

It may be, as some aver, that in the automobile the utilization of steel has reached its zenith. It is true that subsequent contributions to the comfortable life of the age, such as radio, television and aircraft, have required relatively less steel in their structure. But if these products are not made of steel they are made by steel. Whether raw material or vehicle of production, steel indubitably remains the prime raw material of the age.

Fifty years ago—in 1878—the per capita consumption of steel in the United States was only

34 pounds. In 1928, at 959 pounds, it was 28 times as great. Who will say that life today is not 28 times as broad as it was in 1878? Superimpose the increase in demand for steel over the increased creature comforts of the past 50 years and you have true coincidence.

Changing Products Alter Names

CONSTANT change among industrial firms is resulting from effort to attain a better position in manufacturing. This tendency started soon after the war when excess capacity existed and manufacturers sought a side line to give occupation to equipment otherwise idle. It has been carried along by demand for a large volume of new products resulting from development of the radio, the automobile, the airplane.

Plants equipped for making a certain line have taken on the manufacture of parts or complete equipment in these and other lines and by good fortune have developed the new branch to a degree that it has been profitable to continue exclusively in the new line and abandon the old. In many instances the original lines of product have been sold and efforts centered on the new.

As a result the company's name frequently has become obsolete so far as describing its business. A company formerly making wrenches, as an example, has developed a line of automobile parts and has sold its wrench business to a competitor who continues the trade name built up by years of effort. The company then finds its name marks it as a wrench manufacturer, while its product is valves or other automotive parts. A change of name then becomes necessary.

The general tendency now seems strongly toward the manufacture of new products by established concerns which have made a name in some other line. This is more marked than the formation of new companies to manufacture the new articles. Equipment, organization, experience seem to count for much and doubtless results in the production of a better article than a new company could offer. The result often is a complete change by the manufacturer, who finds the new line more profitable than the old.

What Our Readers Are Thinking

Discusses Article on Coal Storage

"COAL Storage Requires Special Attention to Avoid Fires" was the subject of an article by A. T. Ward, general manager, Coal Specialties Co., New York, which was published in the Dec. 13 issue of IRON TRADE REVIEW. This article has prompted the following letter by H. S. Ford, eastern sales manager, R. H. Beaumont Co., Philadelphia, to Mr. Ward.

"We have read with interest your article in the Dec. 13, 1928, issue of IRON TRADE REVIEW regarding the question of coal storage, and being specialists in this particular line of endeavor and having considerable experience therein with records, etc., we feel justified in writing to you and commenting on your article. . . .

"It has been demonstrated that the primary cause of spontaneous combustion is segregation of sizes in the coal pile, thereby creating voids and permitting passage of air through the pile, which air provides the necessary oxygen aid to combustion.

"This point is covered in your article under item 2 of the list of ten points mentioned on page 1500, but with regard only to the ground upon which the coal is stored. Again in item 6 you make a slight reference to this point. Later on, however, you have an excellent opportunity to discuss this question when you refer to trestle storage but in our opinion, you lay undue stress upon the contact of coal with trestle structures, whereas our experience demonstrates that this is of minor significance as contrasted with the question of cone piling.

"In item 3 of your list of cautions, you suggest limiting the height of coal piles to 15 feet. We believe that only a very poor grade of coal with high sulphur content justifies this precaution. We have installations of drag scrapers in various parts of the country in which bituminous coal is stored from 20 to 50 feet in amounts ranging from 15,000 to 150,000 tons with no trouble from spontaneous combustion. . . .

"The fourth item of your precautions in which you state that coal should not be stored in extremely hot weather would impose a very serious handicap upon the building up of storage reserves at power plants because it is only during summer months that such reserves can be built up and it has always been advocated that this policy be pursued, that is, store in summer and reclaim and use in winter.

"This brings us to another feature of coal storage systems as they are now being considered. The old idea of building up a storage which would be left intact over a period of years is giving way to the newer policy of building up large storage areas in summer and using this coal in winter, regardless of whether shipments of coal can be received regularly in winter. This is undoubtedly a result of the development of the cable drag scraper system because heretofore, no system of reclaiming coal could do so at a low enough rate to justify the rehandling of coal. A drag scraper, however, will handle coal for a labor cost of less than one cent a ton, which means that to rehandle the entire year's supply of a power plant is cheaper than the carrying charge on the coal itself.

"You warn against water in contact with coal in storage. We have no records which would cause us to be apprehensive of such practice. There is one large central station in Des Moines, Iowa, which stores its entire reserve coal in concrete ponds which are partly filled with water. At this point, three of the hardest coals to store that we know of are in storage. They are Illinois, Kentucky and Iowa coals. The coal is stocked out and reclaimed by drag scrapers. We do not believe they have had any serious trouble with spontaneous combustion. We are now building a drag scraper installation for the new State Line Generating Co., which will embody this same principle, that is, the base of the pile will be under water constantly but the top will be in the open atmosphere."

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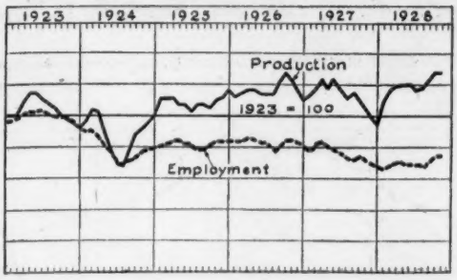

Diminishing Employment Part of Nation's Economic Progress?

STRANGE as it may seem, diminishing employment may result from good management, or from bad management. A manufacturing plant modernized, with good management, might reduce the number of its employes by 100, and increase its output. Another plant, with obsolete equipment and unsound management (they usually go together) may go out of business, and drop 100 employes. The accompanying chart shows industrial production and employment "keyed" to the same base line, as each was in 1923. This shows whether diminishing employment represents progress or decay.

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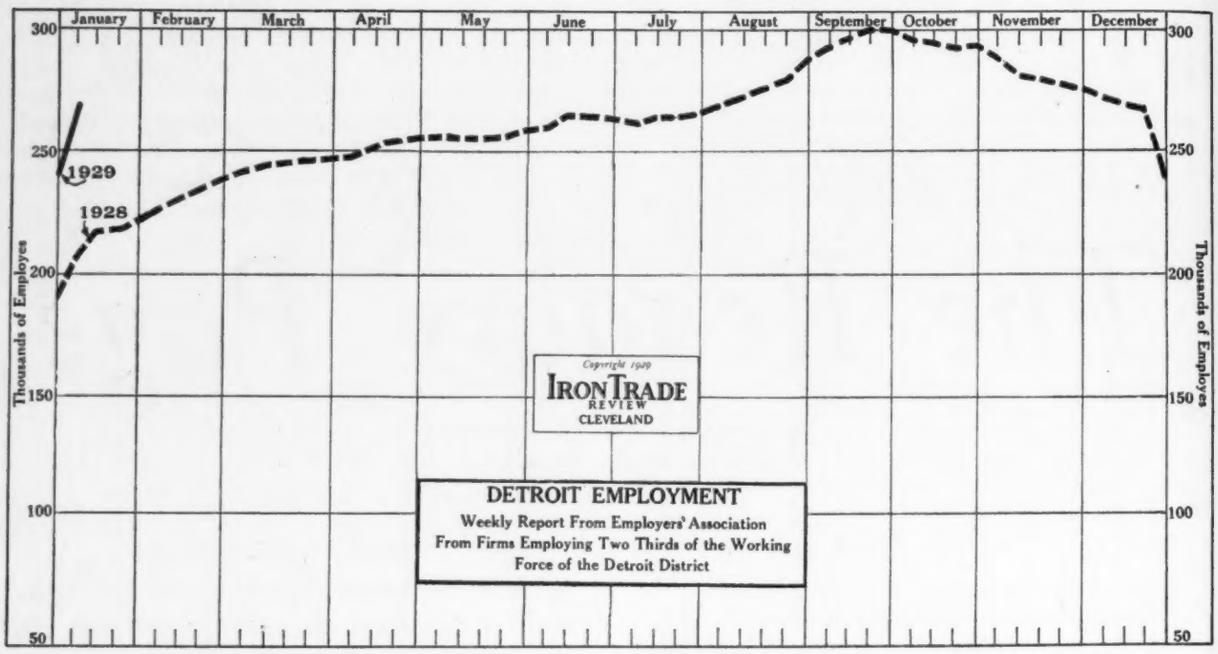
The Business Trend



Automobile Industry Presents Paradox

By JOHN W. HILL, Financial Editor

WITH the beginning of the new year has come an upward swing in employment in the Detroit manufacturing district. All of the holiday slump in employment in the automobile plants has been canceled and the total number of men on the pay rolls exceeds that of one year ago by a large margin. On Jan. 1 employment was reported at 268,601, an increase of 24,000 in a week and of 63,700 over one year ago.

FURTHER large increases are probable in nearby weeks, as the motor car industry gets under way. The Ford Motor Co. has instituted a six-day week and is employing some thousands of additional men. Other plants are expanding their operating schedules as the season gets going.

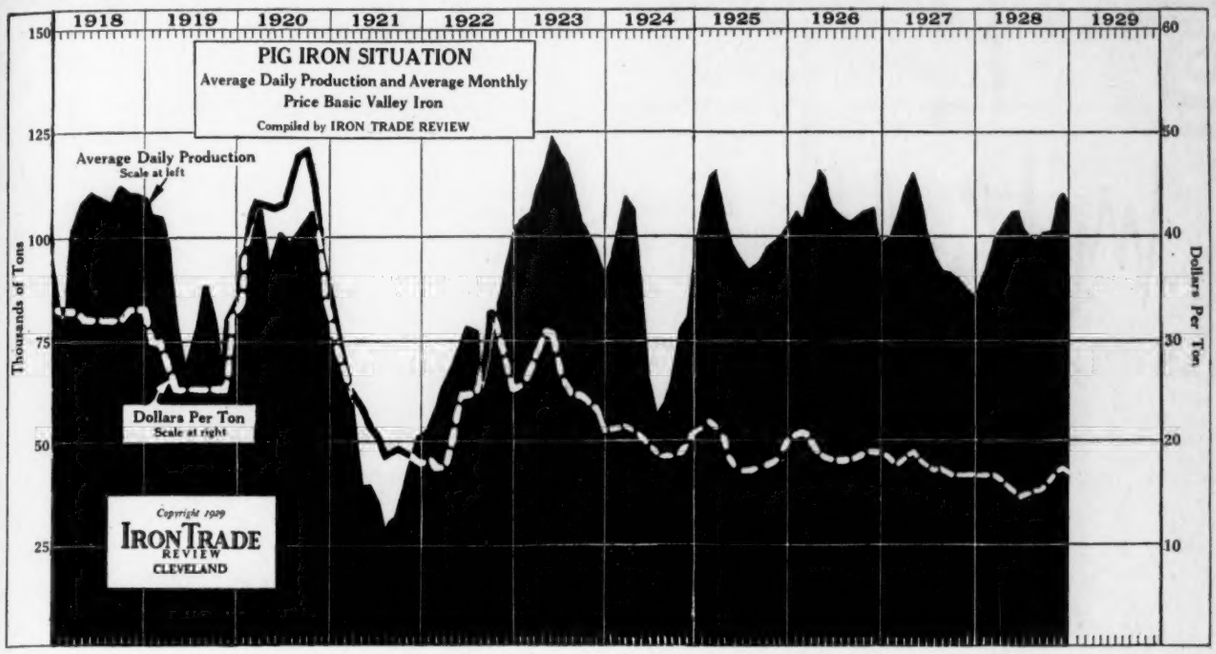
THE current year promises to be one of the most interesting in the history of the automobile industry. Curiously enough, although it is agreed on all sides that high production levels will be reached, the prospect for the industry is charged with uncertainty. This paradox rises from the fact that the dominant figure of Henry Ford is now stalking with aggressive stride back into the market.

SINCE 1926, when the public began to turn a cold shoulder upon Model T, Ford has not been a tremendous competitive force. During most of 1927 his plants were closed while he fixed up a new model, and in 1928 Ford's production was slow in getting to an impressive total. Meanwhile, other companies waxed fat, dividing the market among themselves and building up large capacities.

IT SEEMS probable that in 1929 a new high record of production of probably 5,000,000 cars and trucks will be reached, with fully 3,000,000 of these made in the first half. It is further likely that the greater part of the gain will represent increased outputs of Fords.

THE industry has in its favor the fact that with nearly 25,000,000 cars registered the replacement demand will be larger than ever, that the export demand is growing and that the number of families with two or more cars is increasing. From the viewpoint of the iron and steel industry it seems clear that the motor car industry's requirements will be greatly expanded. This is significant because in 1928, for the first time the automobile became the chief user of steel.

The Business Trend

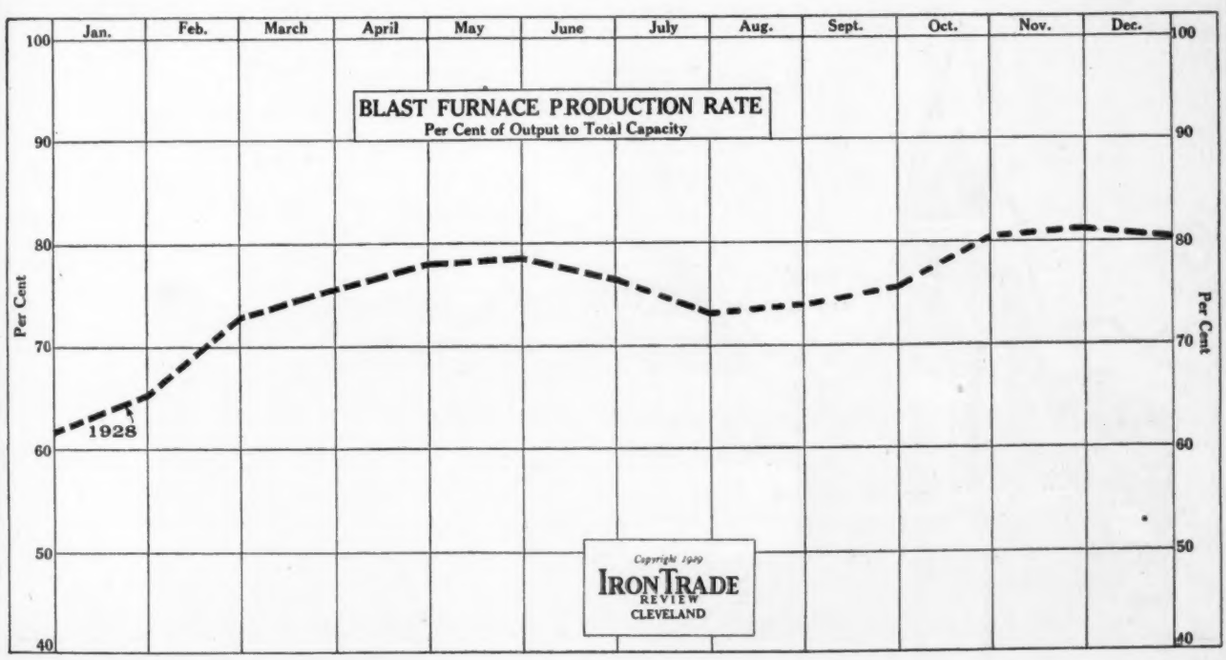


Pig Iron Situation

DECEMBER brought some slackening in the rate of pig iron production. The daily average output for the month was 108,912 tons compared with 110,155 tons in November. A decline for the month from November was a seasonal one. The December rate was the highest of any December in history with the exception of 1918. It compared with 87,039 tons in December, 1927. The average price for pig iron in December was $17.50 per ton, compared with $17 in December a year ago.

Blast Furnace Production Rate

LOWER blast furnace operations in December resulted in a small decline in the rate of production to the capacity furnaces, during the month. The blast furnace operating rate for December was 80.4 per cent, compared with 81.1 per cent in November and 61.8 per cent in December, 1927. Save for November, the December rate was the highest of any month in 1928. The figure is based on the capacity of blast furnaces in the country of 49,605,720 tons as of Dec. 31, 1927.



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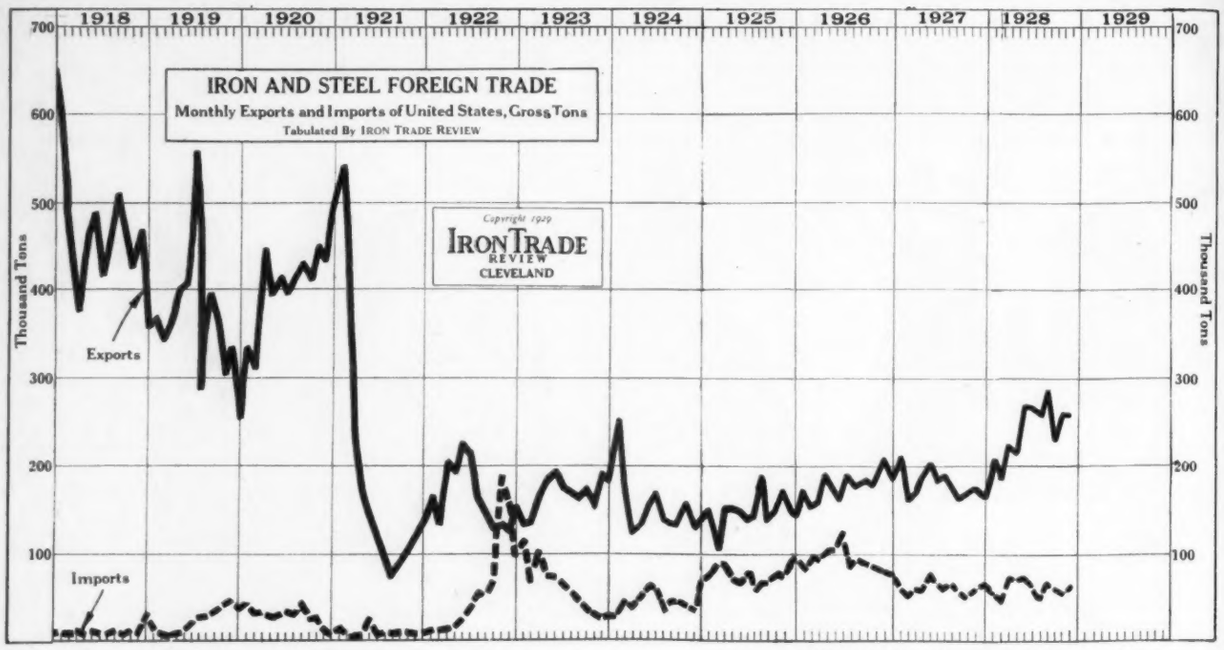
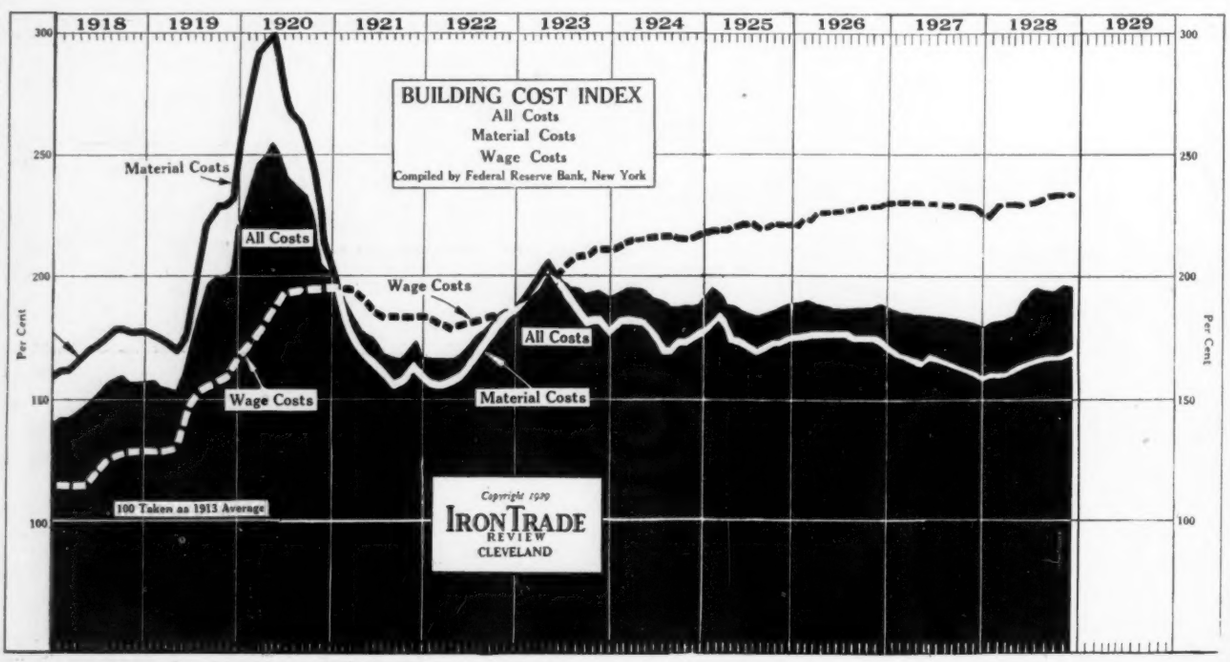

IRON AND STEEL FOREIGN TRADE
Monthly Exports and Imports of United States, Gross Tons
Tabulated By IRON TRADE REVIEW
Copyright 1929
IRON TRADE REVIEW
CLEVELAND
Exports
Imports
Thousand Tons
1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929
700 600 500 400 300 200 100

Steel Foreign Trade

DURING the first 11 months of 1928 there were gains for both exports and imports of iron and steel products compared with the like period one year before. Exports totaled 2,641,187 tons, compared with 2,014,672 tons in 1927. Imports of 696,404 tons compared with 685,804 tons in 1927. In November exports totaled 256,866 tons, compared with 256,870 in October and 177,928 in November, 1927. Imports were 67,103 tons, compared with 63,880 tons in October and 61,882 tons in November, 1927.

Building Costs

BUILDING costs in the closing weeks of 1928 stood at 92 per cent over the 1913 average. This compares with 86 per cent over 1913 as reported one year ago by the federal reserve bank of New York. The increase in building costs has coincided with the increase in building activities during 1928. Most of the gain has been due to higher costs for building material, which now stand at 65 per cent over the 1913 average compared with 57 per cent over 1913 one year ago.



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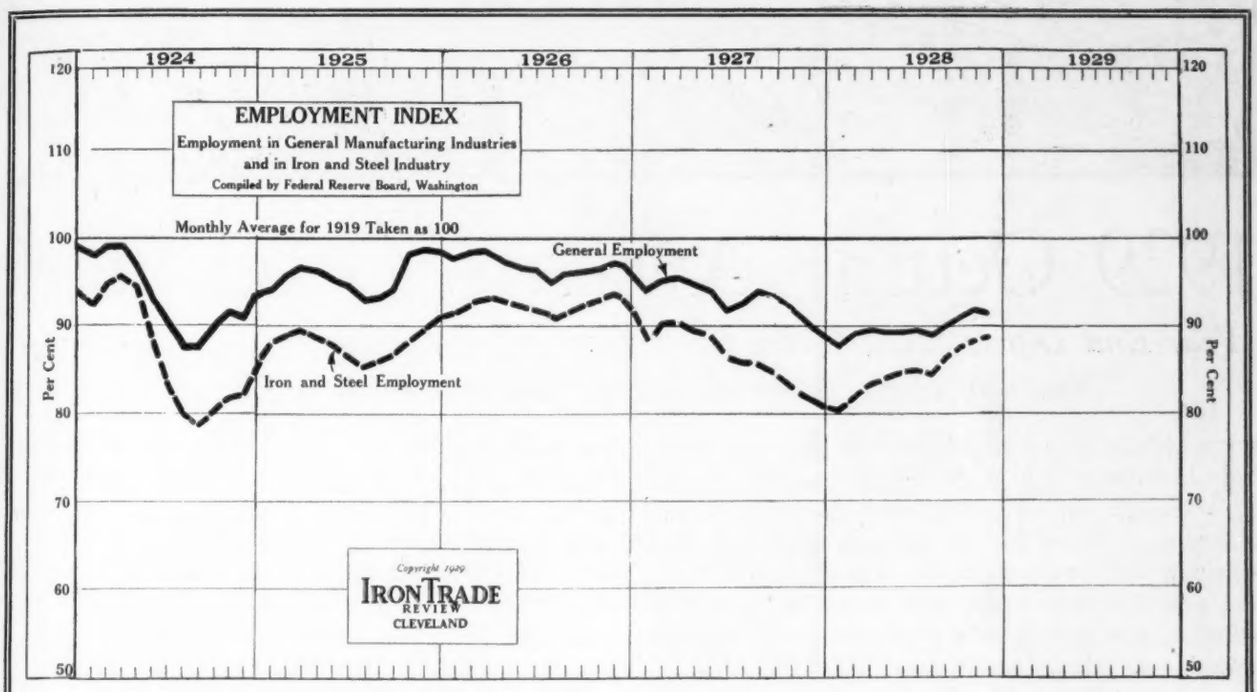
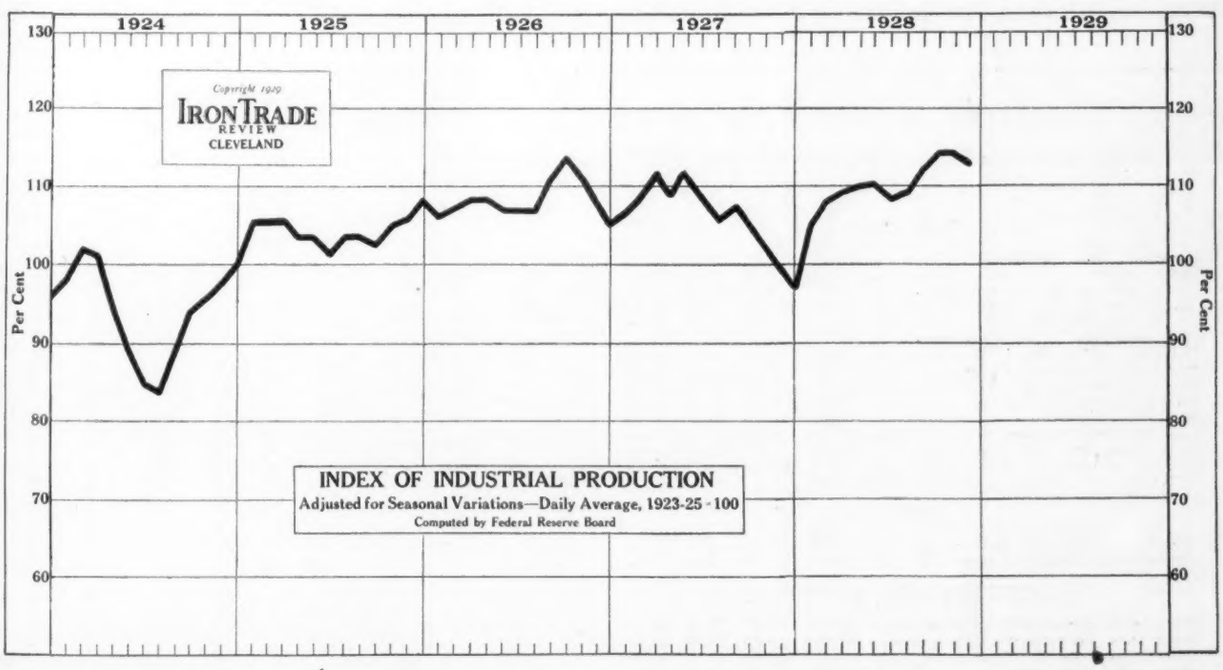


Employment Index

EMPLOYMENT in the iron and steel industry continued to gain during the closing weeks of 1928. For November the index of employment in iron and steel mills as computed by the federal reserve board stood at 89.1, compared with 88.3 one month before and 85 one year ago. The employment level was below 1927 during the first part of the year but it showed gradual improvement and during the latter months the index of employment rose above that of 12 months before.

Industrial Production

INDUSTRIAL activity declined toward the close of 1928 but continued above the level of one year ago. The index of industrial production as computed by the federal reserve board of Washington stood at a figure of 112 in November, compared with 114 in October and 98 one year before. The small decline from the preceding month was due in a substantial measure to the seasonal falling off in the production of automobiles. Iron and steel output and production in other leading lines have continued high.



1929 Getting Away to Good Start

Year-End Dip Is Mild, While Ship, Car and Building Projects Run Steel Needs to High Total—December Ingot Rate Is a Record

TONNAGE requirements for finished steel, dominated by shipbuilding, structural and freight car projects, have expanded to extraordinary proportions in the past week and, considering that both production and demand bridged the year-end with much less than the usual subsidence, are getting the iron and steel markets away to an exceptionally good start for 1929.

Atlantic Coast Ship Needs Taking Plates

Ten thousand tons of steel has been placed for two coastwise steamers, and for other active ship inquiry on the Atlantic coast 85,000 tons is involved. Car ferry and ship work being figured at Chicago requires 15,000 to 18,000 tons. Three-quarters of this ship tonnage is plates.

Eleven of the larger building projects in New York total 90,000 tons of structurals, while the aggregate of small jobs is fully 40,000 tons. This does not include 40,000 tons for subways and 25,000 tons for an elevated roadway, making approximately 200,000 tons of structurals pending in New York alone.

With the Missouri Pacific placing 3000 cars and the Santa Fe 750, the week's car awards exceed 3800, requiring nearly 40,000 tons of steel. The formal inquiry of the Wheeling & Lake Erie for 1100 swells active car inquiry to more than 14,000. The New Haven is a prospective buyer of about 1750 cars. For the 100 locomotives it will build for the New York Central, the American Locomotive Co. has purchased 5000 tons of plates.

While plates and structural shapes have been the chief beneficiaries of the spectacular side of the week's market developments, bars, sheets, strip and other steel products have been active.

Chicago Bar Specifications Heaviest of Year

The past week's bar specifications of a leading maker at Chicago have been the heaviest since the comparable period of 1928 and sales have been exceeded only once in that period. In the lighter products, demand did not drop into the usual valley over the holidays and in the absence of the usual early-January recovery, demand appears less virile than it actually is.

In price as well as inquiry and bookings, finished steel has opened 1929 auspiciously. Heavy fin-

Comparative Prices of Iron, Steel and Coke

Representative Market Figures for This Week, Last Month, Three Months and One Year Ago

	Jan. 9, 1929	Dec., 1928	Oct., 1928	Jan., 1928
PIG IRON				
Bessemer, del., Pittsburgh	$20.01	20.01	19.11	19.26
Basic, valley	17.50	17.50	16.85	17.00
Basic, eastern, del. eastern Pa.	19.75	19.75	19.75	19.50
No. 2 foundry, del., Pittsburgh	19.26	19.76	18.76	19.01
No. 2 foundry, Chicago	20.00	20.00	18.80	18.50
*Southern No. 2, Birmingham	16.50	16.50	16.25	16.00
*Southern Ohio, No. 2 Ironton	18.50	18.50	18.60	19.00
**No. 2X, Virginia furnace	21.25	20.50	20.50	20.50
**No. 2X, eastern, del. Phila.	22.01	22.01	21.26	20.51
Malleable valley	18.00	18.00	17.35	17.25
Malleable, Chicago	20.00	20.00	18.80	18.50
Lake Superior charcoal, del. Chicago	27.04	27.04	27.04	27.04
Gray forge, val., del. Pittsburgh	18.76	18.76	18.26	18.51
Ferromanganese, del. Pittsburgh	109.79	109.79	109.79	104.79
*1.75 to 2.25 silicon. **2.25 to 2.75 silicon				
COKE				
Connellsville, furnace, ovens	2.75	2.75	2.80	2.70
Connellsville, foundry, ovens	3.75	3.75	3.75	3.75
SEMIFINISHED MATERIAL				
Sheet bars, open-hearth, Youngstown	34.00	34.00	33.00	34.00
Sheet bars, open-hearth, Pittsburgh	34.00	34.00	33.00	34.00
Billets, open-hearth, Pittsburgh	33.00	30.00	32.75	33.00
Wire rods, Pittsburgh	42.00	42.00	42.00	41.50

	Jan. 9, 1929	Dec., 1928	Oct., 1928	Jan., 1928
FINISHED MATERIAL				
Steel bars, Pittsburgh	1.90	1.90	1.95	1.80
Steel bars, Chicago	2.00	2.00	2.00	1.90
Steel bars, Philadelphia	2.27	2.27	2.27	2.12
Iron bars, Chicago	2.00	2.00	2.00	1.90
Shapes, Pittsburgh	1.90	1.90	1.95	1.80
Shapes, Philadelphia	2.06	2.06	2.08	2.08
Shapes, Chicago	2.00	2.00	2.00	1.90
Tank plates, Pittsburgh	1.90	1.90	1.95	1.80
Tank plates, Philadelphia	2.10	2.10	2.15	2.05
Tank plates, Chicago	2.00	2.00	2.00	1.90
Sheets, black, No. 24, Pittsburgh	2.85	2.85	2.70	2.80
Sheets, blue anl., No. 10, Pittsburgh	2.10	2.10	2.00	2.10
Sheets gal., No. 24, Pittsburgh	3.60	3.60	3.50	3.65
Sheets, black, No. 24, Chicago	3.00	3.00	2.90	3.05
Sheets, blue anl., No. 10, Chicago	2.25	2.25	2.15	2.25
Sheets, galvanized, No. 24, Chicago	3.75	3.75	3.65	3.90
Plain wire, Pittsburgh	2.50	2.50	2.40	2.40
Wire nails, Pittsburgh	2.65	2.65	2.55	2.50
Tin plate, per base box, Pittsburgh	5.35	5.35	5.25	5.25
SCRAP				
Heavy melting steel, Pittsburgh	18.75	17.40	17.35	15.35
Heavy melting steel, eastern Pa.	16.00	15.35	16.00	14.00
Heavy melting steel, Chicago	14.75	14.50	13.75	12.25
No. 1 wrought, eastern Pa.	16.25	15.50	15.50	15.25
No. 1 wrought, Chicago	14.60	14.50	13.50	12.65
Rails for rolling, Chicago	17.00	16.50	16.40	15.00

Current Prices for Rolled Steel Products

PRICES IN CENTS PER POUND UNLESS OTHERWISE INDICATED

STEEL PLATES

Pittsburgh, base	1.90c to 2.00c
Philadelphia, del.	2.10c to 2.20c
New York, del.	2.175c to 2.275c
Boston, del.	2.265c to 2.415c
Chicago, base	2.00c to 2.10c
Cleveland, delivered	2.09c to 2.19c
Lackawanna, N. Y., base	2.00c to 2.10c
Birmingham, base	2.15c to 2.25c
Coatesville, Pa., base	2.00c to 2.10c
Pacific Coast, c.i.f.	2.20c to 2.30c

STRUCTURAL SHAPES

Pittsburgh, base	1.90c to 2.00c
Philadelphia, del.	2.00c to 2.16c
New York, del.	2.145c to 2.195c
Boston, del.	2.265c to 2.415c
Chicago, base	2.00c to 2.10c
Cleveland, delivered	2.09c to 2.19c
Lackawanna, N. Y.	2.00c to 2.10c
Birmingham, base	2.15c to 2.25c
Bethlehem, Pa., base	2.00c to 2.10c
Pacific Coast, c.i.f.	2.35c

BARS

SOFT STEEL

Pittsburgh, base	1.90c to 2.00c
Chicago, base	2.00c to 2.10c
Birmingham, base	2.15c to 2.25c
Lackawanna, N. Y., base	2.00c to 2.10c
Pacific Coast, c.i.f.	2.35c
Cleveland, base	1.90c to 1.95c
Philadelphia, del.	2.22c to 2.32c
New York, delivered	2.24c to 2.34c
Boston, delivered	2.265c to 2.415c
Pittsburgh, cold finishing	2.05c
Pittsburgh, forging quality	2.15c

RAIL STEEL

Chicago Heights	1.95c
Eastern mills	1.85c

IRON

Chicago, base	2.00c to 2.10c
New York, delivered	2.19c to 2.24c
Philadelphia, delivered	2.17c to 2.22c
Pittsburgh, refined	2.75c to 4.25c

REINFORCING

Pittsburgh billet, cut lengths	2.25c
Stock lengths from mill	2.00c
Chicago, billet	2.35c to 2.60c
Chicago, rail steel	2.05c
Chicago, rail steel, road and bridge work	1.95c to 2.05c
Philadelphia, cut lengths	2.57c

COLD FINISHED STEEL

Cold finished steel bars, drawn or rolled, Pitts., Chi., c.l.	2.20c
Shafting (turned, polished) Pittsburgh	2.20c
Shafting (turned, ground) mill (Depending on size, 1 3/16 to 7-inch)	2.55c to 3.00c
Cold finished steel bars, Cleve.	2.25c

TIN AND TERNE PLATE

Prices per 100-pound box Pittsburgh

*Tin plate, coke base	$5.35

Gary, Ind., base 10 cents higher.

Long ternes, primes, No. 24	4.00c to 4.10c

*Price subject to quantity differentials.

SHEETS

SHEET MILL BLACK

No. 24, Pittsburgh base	2.85c
No. 24, Philadelphia, delivered	3.17c
No. 24, Gary, Indiana Harbor	2.95c
No. 24, Chicago, delivered	3.00c
No. 24, Birmingham, base	3.00c

TIN MILL BLACK

No. 28, Pittsburgh, base	3.00c
No. 28, Gary, base	3.10c

GALVANIZED

No. 24, Pittsburgh, base	3.60c
No. 24, Philadelphia, delivered	3.92c
No. 24, Gary, Indiana Harbor	3.70c
No. 34, Chicago, delivered	3.75c
No. 24, Birmingham, base	3.75c

BLUE ANNEALED

No. 10, Pittsburgh base	2.10c
No. 24, Philadelphia, delivered	2.42c
No. 10, Gary, Indiana Harbor	2.20c
No. 10, Chicago, delivered	2.25c
No. 10, Birmingham, base	2.25c

AUTOMOBILE

No. 20, Pittsburgh, base	4.10c

FURNITURE

No. 24, Grade A, Pittsburgh	3.90c to 4.00c
No. 24, Grade B, Pittsburgh	3.75c to 3.85c

(Turn to the following page)

ished material generally holds at the same level as in the fourth quarter. Bars at Cleveland are decidedly firmer. Sheet mills are gradually piling up tonnage at the $2 per ton advance. New and higher extras on strip steel are netting producers a better return. Quality extras on flat rolled products are putting these lines on a more remunerative basis. The $2 rise in wire products impelled consumers to cover well ahead last month, but less opposition is claimed by makers.

As is usual at the start of a quarter, pig iron buying is light and the accent is on shipments. Melters in the Chicago district are taking iron at a rate equal to the November peak. The lake furnaces are shipping more heavily than in December. The eastern markets generally are fairly active. In the Pittsburgh and Mahoning valley districts, however, the market is inactive and prices lack something of their recent strength.

January May Set Iron Output Record

There are indications, nevertheless, that shipments against contracts and steelworks consumption will be sufficiently heavy to make possible a January pig iron production record. Complete reports on December pig iron give the month a daily rate of 108,702 tons. The highest rate for any January in history—that of 1925—is 108,781 tons or only 79 tons more per day than in December. Last month recorded a net gain of three active stacks; one has already been blown in this month at Martin's Ferry, O., and one each at Buffalo and Birmingham, Ala., are slated for early resumption. This would forecast a January record.

Nineteen twenty-eight's title to the steel production record is confirmed by December statistics. The December daily rate of 160,617 gross tons was the highest for any December. The month's total of 4,015,434 tons, while a slight recession from November, was nearly 30 per cent in excess of December, 1927. The 1928 total of open hearth and bessemer ingots, at 49,853,225 tons, exceeds by a wide margin the previous record 46,936,205 tons of 1926. Including electric and crucible ingots, the year's production topped 50,000,000 tons. Steel corporation subsidiaries are operating this week at 86 per cent.

Large Pipe Projects Near Maturity

For two pipe lines, one from Oklahoma to Indiana and a second in Kansas, the Prairie Pipe Line Co., Independence, Kans., will buy nearly 40,000 tons of steel pipe. Mahoning Valley Sanitary district is buying 10 miles of 36-inch pipe.

All British shipyards having accepted the steel rebate plan, increased orders particularly for plates are expected by British steelmakers, states the IRON TRADE REVIEW weekly cable from London. American bidders have lost to English competitors for tramrails for the London council.

Composite Market Average

Based on Pig Iron, Billets, Slabs, Sheet Bars, Wire Rods, Steel Bars, Plates, Structural Shapes, Black, Galvanized and Blue Annealed Sheets, Tin Plate, Wire Nails and Black Pipe

This week (Jan. 9, 1929)	$36.23
Last week (Jan. 2, 1929)	36.25
One month ago (December, 1928)	36.22
Three months ago (October, 1928)	35.53
One year ago (January, 1928)	35.27
Ten years ago (January, 1919)	53.81
Fifteen years ago (January, 1914)	23.03

Due to weakness in pig iron in the Mahoning valley the IRON TRADE REVIEW index of fourteen leading iron and steel products is off 2 cents this week, to $36.23. Even so, it ranks high above the $35.27 of a year ago.

Current Rolled Steel Prices

PRICES IN CENTS PER POUND UNLESS OTHERWISE INDICATED

SEE ALSO PRECEDING PAGE

HOOPS, BANDS, STRIPS

Hot strip, to 6-in., Pitts.	1.90c to 2.00c
Hot strip, 6 1/16 to 24-in., Pitts.	1.80c to 1.90c
Hot rolled strip, 12 to 24-inch heavier, coils or cut length, plate basis, or 2.10c blue annealed basis.	16 gage and 1.90c to 2.00c
Hot strip, bands 6 in. and under, Chicago	2.10c to 2.30c
Do, 6 1/8 to 24 in.	2.00c to 2.10c
Cold rolled strip, hard coils, 16 inches and under by 0.100-inch and heavier, base Pitts., Cleve. (3 tons and over)	2.85c to 2.95c
Worcester, Mass. (3 tons and over)	3.10c to 3.20c

ALLOY STEEL

Hot Rolled
F.o.b. Mills

Alloy Quality Bar Base is 2.65c to 2.75c

S.A.E. Series Number	Alloy differential	Net, 100 lb. bars
2000	0.25	$3.00
2100	0.55	3.30
2300	1.50	4.25
2500	2.25	5.00
3100	0.55	3.30
3200	1.35	4.10
3300	3.80	6.55
3400	3.20	5.95
4100 0.15-0.25 Mo.	0.50	3.25
4100 0.25-0.40 Mo.	0.70	3.45
4600 0.20-0.30 Mo. 1.25-1.75 Ni.	1.05	3.80
5100 0.60-0.90 Cr.	0.35	3.10
5100 0.80-1.10 Cr.	0.45	3.20
5100 Chrome Spring	0.20	2.95
6100 Bars	1.20	3.95
6100 Spring Steel	0.95	3.70
Chrome Nickel Vanadium	1.50	4.25
Carbon Vanadium	0.95	3.70
9250 (flats)	0.25	3.00
9250 (rounds, squares)	0.50	3.25

TUBING

Boiler

Carload Discounts—F.o.b. Pittsburgh Mills

Steel 3¼ to 3¾-inch	56
Charcoal iron, 3¼ to 3½-inch	18
Seamless hot rolled 3¼ to 3½-inch	56

Lapwelded steel takes two supplementary 5 per cents for carload lots; charcoal, 10 per cent; seamless, 5 per cent.

Note: Discounts for additional sizes and less-than-carload shipments shown in Discounts and Extras table in back of book.

COLD DRAWN SEAMLESS

F.o.b. mill in desirable quantities

Random lengths, over 5 feet	55 per cent
Selected lengths, 1 to 18 feet	53 per cent

WIRE PRODUCTS

F.o.b. Pittsburgh, Cleveland, Ironton base
(Per pound)

	Dealer trade	Large jobbers
Bright plain wire, 6 to 9 gage	2.60c	2.50c
Annealed field wire	2.75c	2.65c
Galvanized wire	3.20c	3.10c
Barbed wire, galvanized	3.40c	3.30c
(Per 100-pound keg)		
Wire nails	$2.75	$2.65
Galvanized nails	4.75	4.65
Polished staples	3.20	3.10
Galvanized staples	3.45	3.35
Cement coated nails	2.75	2.65

Joliet, DeKalb and Waukegan, Ill., Anderson, Ind., and Chicago prices $1 per ton over Pittsburgh-Cleveland-Ironton base on products made there; Duluth $2 higher, Worcester, Mass., and Fairfield, Ala., $3 higher.

Woven wire fencing, retailers, Pittsburgh-Cleveland, net ton $65.

Anderson, Ind., $1 higher, Chicago $2 higher, and Duluth and Birmingham $3 higher.

CUT NAILS, CHAIN, PILING

Cut nails c.l., f.o.b. mills	2.75c
Cut nails, l.c.l. f.o.b. mills	2.85c
Chain, 1-in., proof coil, Pitts.	6.00c
Sheet piling base, Pittsburgh	2.25c

CAST IRON WATER PIPE

Prices per net ton
Class B pipe

Six-inch and over, Birming'm	$37.00 to 38.00
Four-inch, Birmingham	41.00 to 42.00
Four-inch, Chicago	49.20 to 50.20
Six-inch to 24-inch, Chicago	45.20 to 46.20
Four-inch, New York	41.60 to 43.10
Six-inch and over, New York	38.60 to 40.10
Standard fittings, Bir. base	$100.00

Six to 24-inch, base; over 24-inch, plus $20; 4-inch, plus $10; 3-inch, plus $20; gas pipe fittings, $5 higher.

Class A pipe is $4 higher than Class B.

IRON AND STEEL PIPE

Base Discounts Pittsburgh and Lorain, O., to Jobbers in Carloads

	Black	Galv.
1 to 3-inch butt steel*	62	50*
1 to 1½-inch butt iron	30	13

Indiana Harbor, Ind., and Evanston, Ill., 2 points less, Chicago, del., 2½ points less.

*To large jobbers these discounts are increased on black by 1 point and a supplementary discount of 5 per cent on galvanized by 1½ points with a supplementary 5 per cent.

RAILS, TRACK MATERIAL

Standard bessemer rails, mills	$43.00
Standard open-h'th rails, mill	$43.00
Relaying rails, St. Louis	$24.00 to 31.00
Relay rails, Pitts. 60 to 90 lb.	$22.00 to 27.00
Light rails, 25 to 45, mills	$36.00
Angle bars, Chicago base	2.75c
Spikes, railroad, Pittsburgh	2.80c
Spikes, small railroad, 7/16-inch and smaller, Pitts.	2.80c
Spikes, boat and barge, Pitts.	3.00c
Spikes, railroad, Chicago	2.80c
Track bolts, Pitts., steam roads	3.80c
Track bolts, Pitts., stand, jobbers	70 off list
Track bolts, Chicago	3.80c
Tie plates, Chicago, Pitts.	$43.00

BOLTS AND NUTS

Birmingham and Chicago

Discounts are for legitimate jobbing or large consuming trade purchasing in full-case lots, apply to lists of April 1, 1927.

Small lots are 55 to 60 per cent off.

CARRIAGE BOLTS

All sizes, cut thread	60 to 70 off

Rolled thread ⅜ x 6 and smaller take 10 per cent lower list.

Eagle list	60 to 70 off

MACHINE BOLTS

All sizes, cut thread	60 to 70 off

Rolled thread ⅜ x 6 and smaller take 10 per cent lower list.

Lag Screws	60 to 70 off
Plow bolts, Nos. 1-2-3-7 heads	60 to 70 off
Tap bolts	60 to 70 off
Blank bolts	60 to 70 off
Stud bolts without nuts	60 to 70 off
Stove bolts, 75, 20, 10 and 5 off in pkgs., 75, 20, 10 and 5 with 2½ off in bulk.	
Tire bolts	60-5 off

Nuts

Semifinished	60 to 70 off

HEXAGON CAP SCREWS

Milled	80-10-10 off
Upset 1 in. diam. and smaller	85-5 off

SQUARE HEAD SET SCREWS

Milled	80-10 off
Upset 1 in. diam. and smaller	80-10-10 off

RIVETS

Struc. c.l., Pitts.-Cleve.	2.80c to 2.90c
Structural, c.l., Chicago	3.00c
**7/16-inch and smaller, Pitts.	70 and 10 off
Chi., Cleve.	70 to 70 and 10 off

**Some makers quoting 70 off with freight allowed on 300 pounds or more.

WASHERS

Wrought, c.l., Pitts. dist.	$6.50 to 6.75 off
Wrought, c.l., Chicago dist.	$6.70 to 6.90 off
Lock: to dealers	85-5 off
Lock: to consumers	85 off

Raw Materials and Semifinished Products

SEMIFINISHED MATERIAL

Prices Per Gross Ton

BILLETS AND BLOOMS
4 x 4-inch base

Pittsburgh, open-hearth	$33.00
Pittsburgh, bessemer	33.00
Youngstown	33.00
Cleveland	34.00
Philadelphia	38.30
Chicago	35.00
Forging, Chicago	40.00
Forging, Pittsburgh	38.00
Forging, Philadelphia	43.30

SHEET BARS

Pittsburgh	$34.00
Youngstown	34.00
Cleveland	34.00
Chicago	35.00

SLABS

Pitts., Young., and Cleve.	$33.00

WIRE RODS

Pittsburgh, Cleveland	$42.00
Chicago	43.00

SKELP

All grades, Pittsburgh	1.85c to 1.90c

IRON ORE

LAKE SUPERIOR ORE
Per Gross Ton, Lower Lake Ports

Old range bessemer, 51½%	$4.55
Mesabi bessemer, 51½%	4.40
Old range nonbessemer 51½%	4.25
Mesabi nonbessemer, 51½%	4.25

EASTERN LOCAL ORES
Cents per unit delivered at Eastern Pennsylvania and New Jersey furnaces

Foundry and basic, 56-63%	8.00
Copper free low phosphorus 58 to 65 per cent	nominal

FOREIGN ORE
Cents per unit, alongside docks, Atlantic ports

Foreign manganiferous ore, 45-55% iron, 6-8% manganese	10.50 to 11.00
North African low phosphorus	10.00 to 11.00
Swedish foundry or basic, 65%	9.00 to 9.50
Spanish and North African basic, 50 to 60 per cent	nominal
Newfoundland foundry, 55%	8.50

MANGANESE ORE

Prices do not include duty of 1 cent per pound of metallic manganese contained.

Brazilian	35 cents
Indian	35 to 36 cents
Caucasian (53-55 per cent)	36 to 38 cents

FLUORSPAR

85 and 5 per cent grade

Washed gravel, Kentucky and Illinois mines, per net ton	$18.00
Washed gravel, imported duty paid, east, tidewater, gross ton	$19.40 to 20.40

REFRACTORIES

FIRE CLAY BRICK
Per 1000 f.o.b. works

First Quality

Pennsylvania	$43.00 to 46.00
Ohio	43.00 to 46.00
Illinois	43.00 to 46.00
Kentucky	43.00 to 46.00
Missouri	43.00 to 46.00
Maryland	43.00 to 46.00
Georgia and Alabama	40.00 to 45.00

Second Quality

Pennsylvania	35.00 to 38.00
Ohio	35.00 to 38.00
Illinois	35.00 to 38.00
Kentucky	35.00 to 38.00
Missouri	35.00 to 38.00
Maryland	35.00 to 38.00
Georgia and Alabama	30.00 to 35.00

SILICA BRICK

Pennsylvania	43.00
Joliet, Ill., East Chicago, Ind.	52.00
Birmingham	50.00 to 51.00

MAGNESITE BRICK
Per Net Ton

9 x 4½ x 2½	65.00

MAGNESITE
Net Ton Chester, Pa., and Baltimore base

Dead-burned grain magnesite	40.00

CHROME BRICK
Net Ton Chester, Pa., and Baltimore base

9 x 4½ x 2½	45.00

Pig Iron

Heavy Shipments Resumed in Some Districts—Current Sales Small—Valley Foundry Market Is Easier—Stack Lighted

PIG iron producers have well filled order books for first quarter. The next question is whether the buyers will take the iron. Shipments have resumed at a heavy rate in some districts, and are lagging in others. At Chicago they are reported to be at the peak rate of November. Lake Erie furnaces are ahead of the December average. Buffalo and eastern demands are well sustained, while there is a dearth of activity in the Pittsburgh and valley districts. Current buying is of smaller proportions than in many weeks, and inquiries are light. Producers' and consumers' inventories are low, and iron is moving almost immediately into consumption. Prices generally are steady, but on small lot foundry iron business recently $17.50, base, valley, has been done, a cut of 50 cents.

PITTSBURGH, Jan. 8.—A dearth of activity still is noted in the pig iron market. Melters permitted stocks to decline and as a result occasional orders are received for rush shipment, but large tonnage buying is lacking. Furnace stocks also are low, however, and producers believe the market is in a healthy position. Despite the fact scrap prices have far outdistanced pig iron, quotations on the latter have failed to strengthen. From the standpoint of prices pig iron shows to disadvantage compared with a month ago. On No. 2 foundry iron $18, valley, still is obtained for most small lots, but $17.50 has entered a few transactions recently, and the market is $17.50 to $18. Bessemer generally commands no more than $18.25, valley. Recent small sales of malleable have been booked at $18. Basic iron is quiet, with $18 more of an asking price than a sales figure. The Shenango Furnace Co. blew in its second furnace last week.

The average sales price of bessemer iron in December was $18.25, compared with $18.10 in November, according to figures compiled by W. P. Snyder & Co. Basic continued the same as in November, $17.50.

Boston, Jan. 8.—Pig iron producers look forward to heavy buying in the next two months. Foundries are fairly well covered for first quarter, but furnace interests anticipate buying for second quarter. The Mystic Iron Works has less unsold iron on hand than at any other time since last May. Buffalo prices have become firmer. Interests associated with Buffalo furnaces report remarkably small tonnages of unsold iron on hand. New England foundries are specifying on contracts.

Buffalo, Jan. 8.—Pig iron shipping instructions have shown marked improvement since Jan. 1. Little new business has been booked, and only small inquiries are pending. Prices are firm. The Hanna Furnace Co. will light another furnace between Jan. 12 and 15.

New York, Jan. 8.—The new year starts with unusually active demand for pig iron shipments. About 75 per cent of first quarter requirements have been placed under contract. New business amounted to about 7500 tons in the past week. A New Jersey melter is in the market for a moderate tonnage of foundry iron for second quarter. The current price range on foundry iron is $17.50 to $18, base, Buffalo. A little Dutch foundry iron is being sold at $22, duty paid, tidewater, while moderate lots of Indian foundry iron are sold at $21.50 to $22, duty paid, tidewater, plus differentials for silicon.

Cleveland, Jan. 8.—Pig iron shipments are picking up again, and producers expect January will show an increase over Decemebr. The automobile industry continues an important factor. Some makers are basing their expectations largely on reports from automotive sources, and believe a good volume of pig iron business is assured for at least the first half of the year. Consumers' and producers' inventories are low. Most producers report their carryover on books from fourth quarter is less than usual. Sales by furnace interests with headquarters at Cleveland totaled 11,200 tons in the past week, compared with 19,000 tons in the week preceding. Inquiries also have tapered off. Prices are steady, Cleveland furnaces holding at $19, base, furnace, for local delivery, and $18.50, base, furnace, for outside shipment. Prices in western Ohio and northern Indiana generally are on a basis of $19, lake furnace, while in lower Michigan the reported minimum is $20, base, Detroit.

Cincinnati, Jan. 8.—Pig iron producers' books are well filled for first quarter, but new buying is light. An order was taken in the past week for 450 tons of northern foundry iron for delivery in central Indiana, while a Michigan melter bought more than 600 tons of low phosphorus iron. Walter Wallingford & Co. have been appointed agents for Wheeling Steel Corp. and will place the output of the corporation's stock at Martins Ferry, O., which was blown in Jan. 1. The same company has taken the western agency of the Chateaugay Ore & Iron Co., Scranton, Pa., whose furnace is at Lyon Mountain, N. Y.

St. Louis, Jan. 8.—About 75 per cent of pig iron requirements for first quarter in this district have been covered. The St. Louis Gas & Coke Corp. sold about 1750 tons in the past week, including 600 tons to a specialty maker in a nearby Illinois town; 500 tons to an Illinois stove manufacturer, and 500 tons to a local melter. This week will see a resumption of melting by virtually all interests in the district, with the exception of stove plants, some of which will be down until about Feb. 1, mainly to prepare new patterns. Prices continue firm.

Chicago, Jan. 8.—Shipments of northern pig iron are resuming at the peak rate of November. Thus far they are ahead of the first ten days of December. Melters are not anticipating far ahead and are insistent on

(*Concluded on Page* 167)

Pig Iron Prices

Per Gross Ton

Bessemer, valley furnace	$18.25
Bessemer, del. Pittsburgh	20.01
Basic, valley furnace	17.50 to 18.00
Basic, del. Pittsburgh	19.26 to 19.76
Basic, Buffalo furnace	17.50
Basic, del. eastern Pa.	19.75 to 20.00
Malleable, valley furnace	18.00 to 18.25
Malleable, Del. Pittsburgh	19.76 to 20.01
Malleable, Cleve. furn. for local del.	19.00
Malleable, Chicago furnace	20.00
Malleable, Buffalo furnace	19.00
Malleable, del. eastern Pa.	21.50 to 22.00
Malleable, Granite City fur.	20.50
No. 1 foundry, Chicago furnace	20.50
No. 1X, eastern del., Phila.	22.26 to 22.76
No. 1X, Buffalo furnace	20.00
No. 2 foundry, valley furnace	17.50 to 18.00
No. 2 foundry, del. Pittsburgh	19.26 to 19.76
No. 2 plain, Buffalo furnace	18.50
No. 2 foundry, Chicago furnace	20.00
No. 2 foundry, Granite City	20.00
No. 2 foundry, Ironton furnace	18.50
No. 2 fdy. Cleve. furn. for local del.	19.00
No. 2 plain, del. Phila.	21.26 to 21.76
No. 2 plain, Virginia furnace	20.75
No. 2 plain, east. Pa., del. Boston	24.15 to 24.65
No. 2 plain, N. J., tidewater	20.78 to 21.28
No. 2 Alabama, Birmingham	16.50 to 17.00
No. 2 Alabama, del. Cincinnati	20.19 to 20.69
No. 2 Tenn., Birmingham base	16.50
No. 2 Tenn., del. Cincinnati	20.19
No. 2 Alabama, del. Chicago	22.51 to 23.01
No. 2 Alabama, del. Cleveland	22.76 to 23.26
No. 2 Alabama, del. St. Louis	21.42
No. 2X, east, N. J., tidewater	21.28 to 21.78
No. 2X, eastern, del. Phila.	21.76 to 22.26
No. 2X, foundry, Buffalo furnace	19.00
No. 2X, eastern, del. Boston	24.65 to 25.15
No. 2X, Virginia furnace	21.25
Gray forge, val., del. Pittsburgh	19.26
Low phos., standard, valley	27.00
Low phos., standard, Phila.	24.26 to 24.76
Low phos., copper bearing fur.	23.00 to 23.50
Charcoal, Birmingham	28.00
Charcoal, Superior, del., Chicago	27.04

CANADIAN PRICES

No. 2 foundry, del. Toronto	23.60
No. 2 foundry, del. Montreal	25.00
Malleable, del. Toronto	23.60
Malleable, del. Montreal	25.00
Basic, del. Montreal	24.00

Silvery iron, Jackson county, O., furnaces, in per cents: 5—$23 to $24; 7—$25 to $26; 8—$26 to $27; 9—$27 to $28; 10—$29 to $30; 11—$31 to $32; 12—$33 to $34; 13—$35 to $36.

Bessemer ferrosilicon, Jackson county, O., furnaces, in per cents: 10—$31 to $32; 11—$33 to $34; 12—$35 to $36; 13—$37 to $38; 15—$41.50 to $42.50; 16—$43 to $44.

Coke

Beehive Furnace Fuel Shipments Improve—Spot Market Quiet—Prices Steady

DEMAND for foundry coke has improved in some districts. Shipments of beehive furnace fuel have increased slightly, while cold weather has stepped up sales of heating coke. Despite a surplus of beehive furnace coke, and a quiet market, makers are holding firmly for $2.75, the price that has prevailed for several weeks. By-product foundry coke prices are unchanged.

Pittsburgh, Jan. 8.—The beehive coke market is at a standstill. A surplus of furnace fuel exists, but operators expect demand will improve soon and prefer to hold it rather than sell at lower prices. Standard grades are $2.75, unchanged for several weeks. Shipments on contracts are slightly heavier, but the spot market continues quiet. Colder weather is expected to stimulate buying of heating coke. Medium sulphur grades are held at $2.40 to $2.60. The foundry coke situation is unchanged, shipments not showing a marked increase since Jan. 1. The price continues $3.75 to $4.85.

Production of coke in the Connellsville region for the week ended Dec. 29 was 56,300 tons, compared with 58,360 tons the preceding week, according to the *Connellsville Courier*.

Boston, Jan. 8.—Cold weather throughout New England has stepped up demand for domestic coke and ovens are operating at capacity. Many foundries slowed up at the holiday season, but are getting busy again. January shipments of foundry coke are likely to exceed those of December. Foundry coke prices have been renewed for January. They have remained unchanged since April 1.

New York, Jan. 8.—Foundry coke specifications have improved since Jan. 1. Prices are unchanged, and some sellers do not expect a change in the near future. By-product foundry coke continues $11, delivered at most New York consuming points, and $9 to $9.40, delivered at Newark, N. J., depending on freight. Beehive foundry coke continues $3.75 to $4.25, Connellsville, equivalent to $7.66 to $8.16, delivered at Newark. Latrobe, Pa., beehive foundry coke continues $4.85, ovens, equivalent to $8.56, delivered at Newark.

Cincinnati, Jan. 8.—Foundries are increasing specifications for coke. Cold weather has created heavy demand for domestic sizes. Prices are steady.

St. Louis, Jan. 8.—The coldest weather of the winter has stimulated coke sales. By-product producers stocks here have been reduced. Demand for metallurgical coke continues active. Prices are steady.

Birmingham, Ala., Jan. 8.—Little change is noted in the coke market. Southern coke is being shipped steadily into the manufacturing sections of the Middle West. Local consumption is showing signs of improving. By-product foundry coke still is $5, base, Birmingham.

Coke Prices

Prices per Net Ton

Beehive Ovens	
Connellsville furnace	$2.75
Connellsville foundry	3.75 to 4.85
New River foundry	6.50 to 7.00
New River furnace	6.50
Wise county foundry	4.50 to 5.25
Wise county furnace	3.75 to 4.75
By-Product Foundry	
Newark, N. J., del.	9.00 to 9.40
Chicago, ovens	8.00
New England, del.	11.00
St. Louis, del.	9.00
Birmingham	5.00
Indianapolis, del.	8.25
Ashland, Ky.	7.00
Portsmouth, O.	7.00
Detroit, ovens	8.50
Buffalo, ovens	9.00

Ferroalloys

Shipments Keep Pace with Steel Production—Market Steady

Pittsburgh, Jan. 8.—Shipments on ferroalloy contracts are going forward at a high seasonal level. Consumers' stocks are not large. Ferromanganese continues $109.79, delivered Pittsburgh, with 19 to 21 per cent spiegeleisen $34 for spot shipment. Fluorspar is firm at $18. Occasional spot orders are placed. Some fluorspar business which was offered recently at less than $18 was refused by one producer.

New York, Jan. 8.—Shipments of special ferroalloys are high. Prices are unchanged. Wolframite tungsten ore is steady at about $12 a short ton unit, duty paid.

An important producer of ferro-carbon-titanium announces new prices per net ton at producer's plant as follows: Carload lots (56,000-pound minimum), $160; one ton to a carload, $170; and less than one-ton lots, $180.

Bolts, Nuts, Rivets

Specifications Increasing As Stocks Require Replacement

NUT AND BOLT PRICES, PAGE 152

Pittsburgh, Jan. 8.—Specifications for bolts, nuts and rivets are increasing, following a lull over the holidays. Stocks of some buyers were allowed to decline at the end of the year and replenishment, particularly by jobbers, is expected soon. First quarter contracting is completed and in good volume. Prices continue 60 to 70 off for bolts and nuts and 2.90c, Pittsburgh, for large rivets.

Chicago, Jan. 8.—Producers' operations are a little stronger at about 70 per cent in the West. First quarter contracting has been completed, the usual commitments having been ordered. Carriage and machine bolts are quoted at 60 to 70 off. Structural rivets are reported firm at 3.00c, Chicago in carload lots.

New York, Jan. 8.—One of the largest orders for bolt and nut products in this district for a long time has been placed with the Pittsburgh Screw & Bolt Corp. by Patrick McGovern Inc., for the tunnel for the board of water supply of the city of New York, from Yonkers to Brooklyn. The order is for 1800 tons of bolt and nut products, comprising 1200 tons of square twisted rods, upset and threaded; 500 tons of square twisted hoops and bent bars and 100 tons of sleeve nuts for the rods. Marked signs of improvement in demand characterize the bolt and nut market generally. The feature is the way in which jobbers are specifying. Rivet prices reflect a firmer tone. In most cases buyers have nothing lower than 2.90c, base, Pittsburgh. Differentials below this figure are being extended in only a few instances and the minimum to preferential buyers now appears to be 2.80c, base, Pittsburgh.

Cleveland, Jan. 8.—Orders are numerous from diversified users and scattered jobbers on nuts and bolts. The price situation never has been firmer. Regular buyers are quoted 70 off and small users 60 off where their total tonnage does not warrant the lower figure.

Nearly 100 members of the American Society of Mechanical Engineers have registered to go on the special train this spring through the six National parks. This trip, which will be preliminary to the A. S. M. E. spring meeting at Salt Lake City, July 1 to 4, will require 30 days.

Ferroalloy Prices

Ferromanganese, 78 to 82 per cent tidewater duty paid	$105.00
Ferromanganese, del. Pittsburgh	$109.79
Spiegeleisen, 19 to 21 per cent domestic furnace, spot†	34.00
*Ferrosilicon, 50 per cent, freight allowed, carloads	83.50
*Do., less carload	88.50
Do., 75 per cent	130.00 to 150.00
Ferrochrome, 66-70 chromium, 4-6 carbon, cts. per lb. con., del.	11.00
Do., for spot delivery	11.50
Ferrotungsten, stand., lb. cont.	1.00 to 1.03
Ferrovanadium, 30-40 per cent, per lb., contained, on analysis	3.15 to 3.65
Ferro-carbon-titanium carload, producer's plant, net ton	160.00
Do, one ton to carload	170.00
Ferrophosphorus, per ton, carload, 17 to 19 per cent, Rockdale, Tenn., basis (18 per cent)	91.00
Ferrophosphorus, electrolytic, per ton, carload, 23-25% f.o.b. Anniston, Ala. (24 per cent)	122.50

†Quantity diff. apply on 100 tons and over.
*These prices contract, spot $5 higher.

Scrap

Prices Strengthen as New Demand Appears—Dealers Avoid Future Selling of Tonnages

BUYING of iron and steel scrap has quickened since the year opened and prices have felt the influence of increased demand. Dealers find difficulty in covering tonnages to apply on contracts and some are taking a loss. Consumers are resisting present prices but sellers are holding to their ideas.

Chicago, Jan. 8.—While heavy melting steel is being quoted more generally at $14.75 to $15.25, an advance of 25 cents over recent consumer quotations, a leading steelworks consumer has refused to buy from dealers at $15.25. Nevertheless some lots have been sold at that figure. Dealer and broker trading in melting steel is at $15 to $15.25. This grade sold on railroad lists in the past few days at about $15.75, gross, delivered Chicago switching district. The strength in cast borings is well maintained, a tonnage having been closed at $12.75, an advance of 25 cents. Forge flashings and low phos punchings each are up 25 cents. Railroad malleable continues its unusual strength, an order having been closed at $18.50. This is an advance of 25 cents following the two 50-cent rises in the past ten days.

New York, Jan. 8.—Strength characterizes iron and steel scrap. Dealers' buying prices have been advanced on melting steel, wrought pipe, turnings and skeleton steel. Buying by Pittsburgh dealers has forced the market on railroad steel to $12.50 to $13.25, New York, and No. 2 steel to $9.25 to $11.25, although material for

Iron and Steel Scrap Prices

Corrected to Tuesday noon. Gross tons delivered to consumers, except Detroit where dealers' buying prices are shown

Steel Works Scrap

HEAVY MELTING STEEL

Birmingham	$11.50 to 12.50
Boston, dealers	12.50 to 12.75
Boston, No. 2	10.00 to 10.50
Buffalo, No. 1	16.50 to 17.50
Buffalo, No. 2	14.25 to 14.50
Chicago	14.75 to 15.25
Cincinnati, deal.	14.00 to 14.50
Cleveland, No. 1	15.25 to 15.75
Cleveland, No. 2	14.75 to 15.25
Detroit, No. 1	13.50 to 14.00
Detroit, No. 2	11.50 to 12.00
East Pa., del. mill	16.00 to 16.50
Eastern Pa. No. 2	13.00 to 13.50
N. Y., deal., R. R.	12.50 to 13.25
N. Y. deal., yd.	9.50 to 11.25
Pittsburgh, No. 1	18.50 to 19.00
St. Louis, No. 1	13.25 to 13.75
St. Louis, No. 2	12.50 to 13.00
Valleys, No. 1	17.00 to 17.50

COMPRESSED SHEETS

Buffalo	15.00 to 16.00
Chicago	13.00 to 13.50
Cleveland	15.00 to 15.50
Detroit	14.50 to 14.75
E. Pa. new mat.	13.00 to 13.50
Pittsburgh	18.50 to 19.00
Valleys	17.00 to 17.50

BUNDLED SHEETS

Buffalo	11.75 to 12.25
Cincinnati, deal	10.50 to 11.00
Cleveland	13.00 to 13.50
Eastern Pa.	11.00 to 11.50
Pittsburgh	16.50 to 17.00
St. Louis	8.50 to 9.00

SHEET CLIPPINGS LOOSE

Chicago	7.50 to 8.00
Cincinnati	9.75 to 10.35
Detroit	9.25 to 9.50
St. Louis	8.50 to 9.00

STEEL RAILS, SHORT

Birmingham	12.00 to 13.00
Boston	8.25 to 8.75
Buffalo	17.75 to 18.00
Chicago	17.25 to 17.75
Cincinnati, deal.	19.00 to 19.50
Detroit	17.00 to 17.50
St. Louis	17.50 to 18.00

STOVE PLATE

Birmingham	13.00 to 13.50
Boston consumers	11.00 to 11.50
Buffalo	14.50
Chicago, net	12.25 to 12.75
Cinn., deal., net	9.50 to 10.00
Cleveland	10.00 to 11.00
Detroit, net	9.50 to 10.00
Eastern Pa.	12.50
N. Y., deal., mill	8.25 to 8.75
Pittsburgh	12.00 to 12.50
St. Louis	12.25 to 12.75

SHOVELING STEEL

Chicago	16.25 to 16.75
Pittsburgh	18.50 to 19.00
St. Louis	13.25 to 13.75

KNUCKLES, COUPLERS SPRINGS

Buffalo	18.00 to 18.50
Chicago	16.25 to 16.75
Eastern Pa.	17.00 to 17.50
Pittsburgh	19.50 to 20.00
St. Louis	15.25 to 15.75

LOW PHOSPHORUS

Buffalo, billet and bloom crops	18.00 to 18.50
Cincinnati, deal.	15.00 to 15.50
Eastern Pa.	19.00 to 20.50
Pitts. billet and bloom crops	21.50 to 22.00
Cleve. billet and bloom crops	17.00 to 17.50

FROGS, SWITCHES, GUARDS

Chicago	15.75 to 16.25
St. Louis	15.00 to 15.50

ANGLE BARS—STEEL

Chicago	16.25 to 16.75
St. Louis	14.25 to 14.75

Iron Mill Scrap

RAILROAD WROUGHT

Birmingham	9.50 to 10.50
Boston, dealers	11.50 to 12.00
Buffalo, No. 1	13.25 to 13.75
Buffalo, No. 2	15.50 to 16.00
Chicago, No. 1	14.60 to 15.10
Chicago, No. 2	14.75 to 15.25
Cinn., No. 2	14.00 to 14.50
Eastern Pa.	16.00 to 16.50
N. Y., No. 1 deal.	11.00 to 11.50
Pittsburgh, No. 1	14.00 to 14.25
Pittsburgh, No. 2	18.50 to 19.00
St. Louis, No. 1	13.00 to 13.50
St. Louis, No. 2	13.25 to 13.75

WROUGHT PIPE

Boston, dealers	9.50 to 10.00
Eastern Pa.	15.00 to 16.00
Boston	9.00 to 9.50
New York, deal.	11.25 to 11.75

YARD WROUGHT

Boston	9.00 to 9.50

BUSHELING

Buffalo	15.00 to 16.00
Chicago, No. 1	13.00 to 13.50
Chicago, No. 2	8.50 to 9.00
Cinn., No. 1 deal.	11.00 to 11.50
Cinn., No. 2	7.25 to 7.75
Cleveland, No. 1	12.50 to 13.00
Cleveland, No. 2	11.50 to 11.75
Detroit, No. 1	13.00 to 13.50
Detroit, mixed	8.50 to 9.00
Pittsburgh, No. 1	15.00 to 15.50
St. Louis, No. 1	10.00 to 10.50

MACHINE SHOP TURNINGS

Birmingham	9.00 to 9.50
Boston	6.25 to 6.50
Buffalo	8.00 to 8.50
Chicago	8.00 to 8.50
Cincinnati, deal.	9.50 to 10.00
Cleveland	10.00 to 10.50
Detroit	8.50 to 8.75
Eastern Pa.	11.00 to 11.50
New York, deal.	7.50 to 8.00
Pittsburgh	12.50 to 13.00
St. Louis	9.00 to 9.50

MIXED BORINGS, TURNINGS
For blast furnace use

Boston, dealers	6.50 to 6.75
Buffalo	11.50
Cincinnati, deal.	10.00 to 10.50
Cleveland	11.50 to 11.75
Detroit	10.00 to 10.50
Eastern Pa.	10.50 to 11.00
New York, deal.	6.25 to 7.00
Pittsburgh	12.50 to 13.00

CAST IRON BORINGS

Birmingham, chem.	13.00 to 13.50
Birmingham, plain	9.00 to 9.50
Boston, chem.	10.00 to 10.25
Boston, dealers	5.75 to 6.50
Buffalo	15.50 to 16.50
Chicago	12.50 to 12.75
Cincinnati, deal.	10.00 to 10.50
Cleveland	11.50 to 11.75
Detroit	10.00 to 10.50
Eastern Pa.	11.00 to 11.50
Eastern Pa., chem.	14.50 to 15.00
New York, deal.	6.75 to 7.00
Pittsburgh	12.50 to 13.00
St. Louis	9.50 to 10.00
Valleys	12.50 to 13.00

PIPE AND FLUES

Chicago, net	9.75 to 10.25
Cincinnati, deal.	8.50 to 9.00

RAILROAD GRATE BARS

Buffalo	12.50 to 13.00
Chicago, net	12.50 to 13.00
Cincinnati	10.00 to 10.50
Eastern Pa.	12.50
New York, deal.	9.25 to 9.75
St. Louis	11.50 to 12.00

FORGE FLASHINGS

Boston, dealers	9.50 to 10.50
Buffalo	13.00 to 13.50
Chicago	9.50 to 10.00
Cleve., over 10 in.	13.00 to 13.50
Detroit	12.75 to 13.25
Pittsburgh (light)	15.00 to 15.50

FORGE SCRAP

Boston, dealers	7.25 to 7.50
Chicago	17.00 to 17.50
Eastern Pa.	12.00 to 13.00

ARCH BARS AND TRANSOMS

Chicago, net	21.00 to 21.50
St. Louis	22.00 to 22.50

Iron, Steel Works Scrap

AXLE TURNINGS

Boston, deal	6.75 to 7.00
Buffalo	13.50 to 14.00
Chicago	12.25 to 12.75
Cleveland	12.50 to 13.00
Eastern Pa.	12.00 to 13.00
Pittsburgh	16.00 to 16.50
St. Louis	11.50 to 12.00

STEEL CAR AXLES

Birmingham	16.00 to 17.00
Boston, ship point	16.00 to 16.50
Buffalo	18.25 to 18.75
Chicago	18.00 to 18.50
Cleveland	19.50 to 20.00
Eastern Pa.	22.00
Pittsburgh	21.50 to 22.00
St. Louis	19.50 to 20.00

SHAFTING

Boston, ship point	13.00 to 13.50
Chicago	17.35 to 17.90
Eastern Pa.	19.00 to 20.00
New York, deal.	15.00 to 15.50
St. Louis	18.00 to 18.50

Iron Foundry Scrap

CAR WHEELS

Birmingham, iron	12.00 to 13.00
Boston, iron	14.00 to 14.50
Buffalo, iron	13.00 to 13.50
Buffalo, steel	17.50 to 18.00
Chicago, iron	14.00 to 14.50
Chi., rolled steel	18.00 to 18.50
Cincinnati	12.50 to 13.00
Eastern Pa., cast	16.50 to 17.00
Eastern Pa., rolled	18.00
N. Y., iron, deal	12.00 to 12.50
Pittsburgh, iron	16.00 to 16.50
Pittsburgh, steel	19.00 to 19.50
St. Louis, iron	14.50 to 15.00
St. Louis, steel	16.25 to 16.50

No. 1 CAST SCRAP

Birmingham, cup.	14.50 to 15.50
Buffalo	15.50 to 16.50
Boston, textile	15.00 to 15.50
Chicago, mach.	17.65 to 18.20
Chicago, railroad	16.80 to 17.35
Chicago, agri.	15.70 to 16.25
Cincinnati, mach. cupolas, net deal.	16.50 to 17.00
Cleveland, cupola	16.00 to 16.50
Detroit, net	13.00 to 13.50
Eastern Pa. cupola	16.50 to 17.00
N. Y., cup., deal.	13.00 to 13.50
N. Y., del. local foundries	16.50 to 17.00
Pittsburgh, cupola	15.00 to 15.25
San Fran., del.	13.50 to 14.00
Seattle	16.00 to 16.25
St. Louis, mach.	15.00 to 15.50
St. Louis	15.00 to 15.50
Valleys	16.50 to 17.00

HEAVY CAST

Boston	10.50 to 11.00
Buffalo, breakable	13.00 to 13.25
Cleve., breakable	12.50 to 12.75
Detroit, auto., net	19.00 to 19.50
Detroit, breakable	10.00 to 10.50
Eastern Pa.	16.00
New York, deal.	11.50 to 12.00
Pittsburgh	15.00 to 15.50

MALLEABLE

Boston, railroad	15.75
Buffalo	15.75 to 16.25
Chicago, agri.	13.50 to 14.00
Chicago, railroad	18.00 to 18.50
Cinn., R. R., deal.	15.00 to 15.50
Cinn., agri., deal.	14.00 to 14.50
Cleveland, agri.	15.00 to 15.50
Cleveland, rail	16.00 to 16.50
Detroit, auto	14.00 to 14.50
Pittsburgh, rail	15.00 to 15.50
St. Louis, rail	15.00 to 15.50

Miscellaneous Scrap

RAILS FOR ROLLING
5 feet and over

Birmingham	13.00 to 14.00
Boston, dealers	12.00 to 12.50
Rails scrap, Boston	11.75 to 12.75
Skeleton, Boston	9.00 to 9.25
Buffalo	15.50 to 16.00
Chicago	17.00 to 17.50
Eastern Pa.	16.50 to 17.00
New York	11.50 to 12.00
Pittsburgh district	18.50 to 19.00
St. Louis	15.50 to 16.00

LOCOMOTIVE TIRES

Chicago, No. 1	15.00 to 15.50
Chicago, cut	17.50 to 18.00
St. Louis, No. 1	14.00 to 14.50

LOW PHOS. PUNCHINGS

Chicago	17.25 to 17.75
Pittsburgh	19.50 to 20.00

eastern Pennsylvania consumption is no higher than $10 to $10.50. Strength in heavy melting steel is further reflected by some dealers being forced to pay $16, delivered, on railroad steel for Claymont, Del., the price actually paid by the consumer. A recent buyer of miscellaneous tonnage is a Harrisburg, Pa., mill. While heavy melting steel was contracted for at the price previously paid by this interest, an advance of 50 cents a ton is reported in heavy breakable cast and skeleton steel. Scarcity in wrought pipe has resulted in an advance to $11.25 to $11.75, New York, the outside price being on pipe for shipment to Lebanon, Pa.

Philadelphia, Jan. 8.—While buying of iron and steel scrap by consumers involves only scattered lots, dealers are buying heavily to fill contracts and the price tendency is higher.

Pittsburgh, Jan. 8.—Although mills are opposing recent high prices of steel scrap, some consumers have entered the market for fairly substantial tonnages. One mill paid $18.75 for a lot of heavy melting steel and several other transactions have been made at $18.50 to $19. The upturn in heavy melting steel to a top of $19 has served to draw some material from other markets. Steel specialties are firm at $19.50 to $20 with blast furnace material holding at $12.50 to $13. Compressed sheets still are scarce and quoted at $18.50 to $19.

Buffalo, Jan. 8.—Sale of strictly No. 1 heavy melting steel at Buffalo, is claimed by a large dealer. Dealers anticipate a $16.50 price for No. 1 at Lackawanna with the usual differential for No. 2, which would be an increase of about $1 over the last purchase there. Other materials, notably low phosphorus, are higher this week, dealers claiming actual sales to be the basis of their new prices.

Detroit, Jan. 8.—Prospects for early sales to consumers of scrap grow brighter. Dealers with scrap for sale are asking 25 to 50 cents per ton more on several grades. Heavy melting steel is held at $14.25 to $14.75. Relatively high figures are being realized by automobile companies on their January lists.

Cincinnati, Jan. 8.—Some new railroad offerings are under consideration by scrap dealers, the Norfolk & Western offering 5000 tons and the Southern 7000 tons, both closing Jan. 11. Movement of scrap is excellent. Prices are holding well and some advances are noted.

Cleveland, Jan. 8.—Increasing strength is shown in scrap, particularly in steel mill grades. While local mills have not placed new orders, expectations are they soon will. The fact that Sharon Steel Hoop Co. and other mills in the Pittsburgh and Youngstown districts are buying or showing an inclination to buy makes the trade optimistic. No. 1 heavy melting here is up another 50 cents, as are heavy melting and compressed sheets in the valley.

Boston, Jan. 8.—While little scrap has moved from New England in the past week or so, a distinctly better situation prevails. There is a firmer price range, with heavy melting steel, scrap rails, rails for rerolling, steel turnings and borings and forge flashing higher.

St. Louis, Jan. 8.—Expected heavy buying by consumers of iron and steel scrap has failed to materialize. Dealers believe it will be in evidence shortly, and are showing confidence by paying higher prices for some items than mills will pay.

Toronto, Ont., Jan. 8.—No advance contracts for iron and steel scrap were closed during the week and spot sales were confined to small tonnages for immediate needs. Inquiry is improving and dealers look for a stronger demand about the middle of the month. As a result, dealers are making stronger bids for supplies to add to their yard holdings. Prices are firm and unchanged.

Birmingham, Ala., Jan. 8.—Quotations on iron and steel scrap are practically unchanged and prospects are bright as many consumers increase their production. Heavy melting steel holds firmly at $12.50 for the better quality.

Canadian Scrap

Dealers' Buying Prices

MONTREAL
Per Gross Ton

Iron axles	$22.00
Steel axles	20.00
Car wheels	16.00
Stove plate	13.00
Wrought pipe	5.00
Turnings	6.00
Heavy melting steel	7.50

TORONTO

Steel axles	14.00
Iron axles	16.00
Heavy melting steel	9.50
Turnings	7.00
No. 1 mach. cast (net)	15.00
Malleable (net)	13.00

Board of Trade Tonnage Lower in 1928

A decline last year in structural tonnage going into building construction is indicated by the revised figures of the Structural Steel Board of Trade for the metropolitan district, 1928 bookings amounting to 425,935 tons compared with 512,000 tons in 1927. This total also compares with 375,000 tons in 1926; 640,000 tons in 1925; 540,000 tons in 1924; 450,000 tons in 1923; and 370,000 in 1922. Last year's total was 55,232 tons lower than the previous 6-year average of 481,167 tons. Substantial volume of subway and bridge work was placed, however, in 1928. The Board's total for December was 26,225 tons as against 27,756 tons for November.

Semifinished

Market Fairly Active—Specifications Good—Some Contracts Closed at Higher Prices

DEMAND for semifinished steel continues active, some producers operating at capacity expecting to continue their present rate through first quarter. Additional contracts have been closed at $34 for sheet bars, $1 over the price prevailing in fourth quarter. Some users are covering for shipments to be billed at prices prevailing at time material is called for.

SEMIFINISHED STEEL PRICES, PAGE 152

Pittsburgh, Jan. 8.—Consumption of sheet bars continues active. Buyers specified heavily against fourth quarter contracts, in view of the $1 advance in the first quarter price. Sheet bars are firm at $34, and additional contracts have been signed at this figure. Rerolling billets are fairly active. First quarter contracts for 4 x 4-inch billets and the equivalent size of slabs have been placed at $33, with smaller material $1 higher. Wire rods continue $42. Demand is steady. Skelp is 1.85c to 1.90c, Pittsburgh.

Philadelphia, Jan. 8.—Several billet sales were made in the past week at $33, base, Pittsburgh, for rerollers, and $38 for forging quality.

New York, Jan. 8.—Some billets have been placed under contract for first quarter at prices prevailing at time of shipment. Current orders are taken at $33, base, Pittsburgh, for open-hearth rerollers and $38 for open-hearth forging quality. Small lots sometimes bring higher prices. A fair amount of contracting for wire rods is noted at $42, base, Pittsburgh. Consumption of wire rods is brisk.

Cleveland, Jan. 8.—Specifications for sheet bars, billets and slabs enable the leading local merchant producer to continue operations at 100 per cent. Business in hand indicates this rate will be held at least through first quarter. Prices are steady.

Tube Personnel Changing

Pittsburgh, Jan. 8.—An announcement by the National Tube Co. concerning changes in personnel is expected tomorrow. It is rumored that several important officials have resigned. William A. Cornelius, head of the McKeesport plant, resigned Jan. 1 shortly after Fred W. Waterman succeeded Taylor Allderdice as president.

Bars

Reduced Stocks Cause Consumers to Order Heavily—Prices Steady at Current Level

DEMAND for soft steel bars in general is steady at fourth quarter rate. At Chicago mills are practically at capacity and bars are in greater demand than other finished steel products. Since bar demand continued heavy to the end of the year, the situation is unusually steady. Automotive buying is less of a factor in present activity.

BAR PRICES, PAGE 151

Chicago, Jan. 8.—Bar mill operations lead general finished steel activity. Some bar mills are engaged at practical capacity, and deliveries have not eased as in other finished products. One producer reports his specifications for bars and other finished material the best since the opening week in 1928, and sales for the week just ended the second best in that period. The fact that bar orders are widely diversified, and that most individual specifications are in moderate lots, indicates a sound miscellaneous demand in the absence of heavy automotive tonnage. Farm equipment and tractor specifications are holding to the pace of the past 30 days.

Further contract sales on the basis of 2.00c to 2.10c, Chicago, are reported, as well as contract orders in that range covering January and February.

New York, Jan. 8.—Steel bar specifications have improved to such an extent the slack on account of inventory at the first of the year has been fully taken up. The volume of business is at about the fourth quarter average rate. Buyers generally are under contract for the first quarter. Most individual buyers are on the basis of 2.00c, base, Pittsburgh, equivalent to 2.34c, delivered New York. Some are paying 1.95c, base, Pittsburgh, and a considerable number are paying 1.90c.

Demand for common iron bars reflects improvement. A feature is the firmness of the 1.90c, base, Pittsburgh, price, equivalent to 2.24c, delivered New York, adhered to in most cases, subject to differentials on occasional attractive tonnages.

Pittsburgh, Jan. 8.—Demand for merchant steel bars is unchanged from preceding weeks, which showed no marked decline despite seasonal influences. Consumers' stocks in some instances were reduced during December for inventory and the stimulus of a higher first quarter price also was lacking. Bars generally are held at 1.90c to 1.95c, Pittsburgh, with 2.00c applying only in the case of relatively few consumers.

Cleveland, Jan. 8.—Soft steel bar prices appear firmer, with 1.95c, Cleveland, the most general price, following the booking of considerable business at 1.90c, Cleveland. Specifications did not undergo the usual year-end dip and hence there has been no recovery. Rarely has January started so auspiciously as this year. Automotive requirements continue to lead, and indications still point to an unusual first quarter production, with commensurate bar needs.

Philadelphia, Jan. 8.—Steel bar shipments are heavy and new specifications are brisk, with prices 1.90c to 2.00c, base, Pittsburgh. Differentials below this level are infrequent.

Class I railroads, Nov. 30, had 222,539 surplus freight cars in good repair, states the American Railway association.

Iron, Steel Index Falls

Washington, Jan. 8.—November iron and steel production index number was 119, compared with 125 for October and 88 for last November, taking 1923-1925 as 100, according to the department of commerce.

Production index number for November for nonferrous metals was 126, compared with 120 for October and 106 for November, 1927.

Unfilled orders index for iron and steel for November was 76, compared with 75 for October and 71 for November, 1927.

Plan Foundry Meeting

The third annual foundry conference to be held by the department of mining and metallurgy and the extension division of the University of Wisconsin is scheduled for Madison, Wis., Feb. 5-8. A session on "Apprenticeship in the Foundry Industry" under the leadership of C. J. Freund, apprentice supervisor of the Falk Corp., Milwaukee, will be a feature of this year's conference.

Plates

Car Inquiries Call for 100,000 to 150,000 Tons—Ship, Locomotive and Tank Construction Active

BETWEEN 100,000 and 150,000 tons of plates is involved in freight car inquiries now pending. One lot of 5000 tons of plates have been awarded for 100 locomotives for the New York Central. The leading interest has been awarded 7500 tons of plates for two Atlantic liners. Active inquiries for merchant vessels involve 60,000 tons.

PLATE PRICES, PAGE 151

New York, Jan. 8.—About 10,000 tons of steel has been awarded to Carnegie Steel Co. by Newport News Shipbuilding & Dry Dock Co. for construction of two Ward liners for the Atlantic, Gulf & West Indies Steamship Co. About 7500 tons will be plates and the remainder shapes and bars. About 5000 tons of plates for 100 locomotives to be built by American Locomotive Co. for New York Central railroad have been awarded to Bethlehem Steel Co. and Otis Steel Co. Current indications are 1929 will be a more active locomotive year than 1928. Active inquiries for merchant vessels now before shipbuilders involve 85,000 tons of steel, of which nearly 60,000 tons is plates. Standard Oil Co. of New Jersey continues to buy considerable tonnage of still bottom plates for Bayway, N. J., and large plate requirements are expected in connection with plans of Gulf Refining Co. for new oil refineries in Philadelphia and in the metropolitan area of New Jersey. The Gulf Refining Co. is expected to place orders in connection with a new refinery at Sweetwater, Tex. Between 100,000 to 150,000 tons of plates is involved in car inquiries now pending. Current prices on plates range from 2.00c to 2.10c, base, Coatesville, equivalent to 2.17½c to 2.27½c, delivered, New York, subject to differentials on large tonnages.

Pittsburgh, Jan. 8.—The Riter-Conley Co., has been awarded a contract for 35 miles of 74 x 7/16 inches lock bar, steel pipe line, through T. A. Gillespie & Co. for the North Jersey Water Supply commission. Plates 118 x 364 inches awarded to the Carnegie Steel Co. involve 36,000 tons instead of 35,000 tons as previously reported. These are to be fabricated at Leetsdale, Pa. for the Wanaque aqueduct, New Jersey.

Plate specifications show little change compared with late December. The Jones & Laughlin Steel Corp. has received an order for ten flush-deck river barges requiring 1000 tons of plates and shapes, to be built for

Wood Bros. Construction Co., Lincoln, Nebr. Prospective purchases of river craft by several private and government interests will require a fair tonnage of plates.

Chicago, Jan. 8.—From 4500 to 5500 tons of oil tank plates has been placed for southwestern refinery work, the material to be fabricated here. About 5000 to 6000 tons of oil tankage is pending. Car ferry and shipbuilding demand has taken 15,000 to 18,000 tons of plates and structural steel in the past 30 days. The 12,000 tons of plates and structurals for the Denver water line is being readvertised. The spurt of a week ago in specifications from car shops is maintained. Plate mill operations continue slightly above 75 per cent. Numerous sales are reported on the basis of 2.00c to 2.10c, Chicago.

Philadelphia, Jan. 8.—Plate demand has improved, and is nearly equal to the average for the fourth quarter. Shipyards will bid on new plans out today for two Matson liners, involving 11,000 to 12,000 tons of steel each, mainly plates. The De Giorgio Fruit Co. is asking for revised bids on one or two boats involving 3500 tons of steel each. Moderate tonnages also are involved in current inquiries for small craft. Plate prices range from 2.00c to 2.10c, base, Coatesville, subject to differentials for large tonnages.

About 1800 tons of plates is involved in the following locomotive orders booked by Baldwin Locomotive Works: 24 from Louisville & Nashville; 6 from Great Northern; 10 from the Burlington, and 4 from the Santa Fe.

CONTRACTS PLACED

35,000 tons, lockbar steel pipe for the North Jersey water supply commission. General contract to T. A. Gillespie & Co. Plates placed with Carnegie Steel Co. Line will be 35 miles long, 74 inches in diameter.

4500 tons, oil tankage for refinery work in Southwest, to unnamed Chicago district fabricator.

1000 tons, plates and shapes, 10 flush deck barges for Wood Bros. Construction Co., Lincoln, Nebr.; to Jones & Laughlin Steel Corp.

165 tons, 14-inch pipe line, St. Helens, Oreg., to Beall Pipe & Tank Co.

125 tons, 18-inch welded pipe, Vancouver, B. C., to Harvey Smilloe & Co.

CONTRACTS PENDING

12,000 tons, water line, Denver; revised bids in.

1800 tons, plates and shapes, 20 coal barges for United States engineers, Rock Island, Ill.; bids close Jan. 28.

100 tons, 10 to 14-inch riveted pipe, Terra Belle irrigation district, Terra Belle, Calif. Bids opened.

Is Chosen Vice President

J. E. McDonald, who resigned recently as sales manager of the Edwards Valve & Mfg. Co., East Chicago, Ill., has been made vice president and sales manager of B. Floersheim & Co., Pittsburgh, piping engineers and contractors.

Pipe

Pressure Pipe Orders and Inquiries More Numerous—One 32,500-Ton Steel Pipe Line Up

CAST pipe lettings are more active, with 5011 tons let in the far West, including 3135 tons for Portland, Oreg. Chicago reports several orders involving 1600 to 4000 tons apiece. New York has several 1000 to 5000-ton lots pending. Milwaukee takes new bids on 9000 tons. Detroit may place 5700 tons with domestic makers, despite a low French bid. A 32,500-ton steel pipeline is up.

PIPE PRICES, PAGE 152

Pittsburgh, Jan. 8.—Prairie Pipe Line Co. is in the market for 32,500 tons of 8 and 12-inch line pipe for a line paralleling its present one from Panova, Okla., to Griffith, Ind. The Prairie company also will place 35 miles of 6-inch for a line from Florence to its Wichita, Kans., plant.

Welded pipe generally lacks activity of seamless material which is in fair demand from the oil country. Mills entered the new year with fair backlogs of line pipe although considerable of recent business went to the Middle West. Mechanical tubing demand is slightly more active and boiler tubes receive a steady call.

An item in the market review section of the Dec. 27 issue stating "an adjustment in discounts gives lap-welded steel pipe an advantage over seamless pipe" referred to boiler tubing. No price changes have been effected in any other tubular material.

Boston, Jan. 8.—A large New England utility company is inquiring for 4000 tons of pipe for 1929 spring delivery. Another shortly will ask for a like amount and many municipalities and towns indicate market entrance before Jan. 31. The Warren Foundry & Pipe Co. was low on 2000 tons 8 to 16-inch pipe and 30 tons of special fittings for Boston.

New York, Jan. 8.—While fresh inquiry is relatively light and little business is being closed, cast pipe prices appear steady. This strength is reflected in the bid of $42.30, delivered, on 200 tons of water pipe for Jersey City, N. J. Among leading inquiries is 5000 tons of gas pipe for the Allied Power & Light Co., this city.

Chicago, Jan. 8.—Orders for cast iron pressure pipe for gas companies run into good volume. Individual orders closed recently involve 1600 to 4000 tons apiece. Some are contract orders and do not call for early shipment. Although bids for the 9000 tons of 6 to 16-inch pipe for Milwaukee showed low prices of $43.90, delivered, on 4400 tons of 6 to 12-inch, $43.70 on 2700 tons of 8-inch, and $43.60 on 1500, tons of 16-inch, they were rejected. The freight rate from Birmingham is $8.50. Bids, which habitually are low for Milwaukee tonnage, indicate surprising strength in the market. New bids will close Jan. 12. Awarding of the 5700 tons of large-sized pipe for Detroit again has been postponed. The city council has under consideration a resolution to award the project to domestic bidders, despite the low French pipe bid. Chicago delivered quotations are steady at $45.20 to $46.20 for the larger diameters.

Youngstown, O., Jan. 8.—Bids will be opened Feb. 5 for 10 miles of pipe by the Mahoning Valley Sanitary district J. D. Waddell, Niles, O., is president. Two lines of pipe, 36 inches in diameter, paralleling one another 30 feet apart, will be laid from the Meander creek pumping station at the dam above Niles to the Youngstown distributing reservoir near Perkins Corners, a distance of about five miles. The actual length is 54,000 lineal feet of 36-inch pipe. Beside that, there will be at the reservoir 1000 feet of 48-inch pipe. Alternative proposals will consider three kinds of pipe: Cast iron; heavy steel plate pipe with a dipped bituminous coating; and light sheet steel pipe encased in concrete inside and out. Hence, the bids submitted are expected to vary widely.

Cleveland, Jan. 8.—Pipe jobbers enter the new year with normal and in some cases heavy stocks. Weather conditions for several weeks have militated against a more rapid turnover. New buying probably will not amount to anything, producers believe, until March.

Birmingham, Ala., Jan. 8.—Cast iron pipe interests start the year under better auspices, with 75 per cent operations noted. A number of lettings are reported. Current inquiries promise much to business for February. Manufacturers are more cheerful. They have small stocks and shipments are active.

CONTRACTS PLACED

3135 tons, class B pipe, Portland, Oreg., allocated as follows: 475 tons 8-inch to Pacific States Cast Iron Pipe Co., 238 tons 8-inch to American Cast Iron Pipe Co., and 2422 tons of 6 to 20-inch to United States Cast Iron Pipe & Foundry Co.

995 tons, 4 to 24-inch class B and C pipe, Bellingham, Wash., to United States Cast Iron Pipe & Foundry Co.

324 tons, 6-inch class B and C, San Diego, Calif., to United States Cast Iron Pipe & Foundry Co.

296 tons, class C and D pipe, Vancouver, B. C., to Leith Murray & Co.

282 tons, Friday Harbor, Wash., to United States Cast Iron Pipe & Foundry Co.

200 tons, 6 to 24-inch class B pipe, Jersey City,

N. J., to R. D. Wood & Co. at $42.30, delivered.
200 tons of 12-inch pipe for Lexington, Mass., reported awarded eastern maker.
135 tons, 2-inch class B pipe, Long Beach, Calif., to Pacific States Cast Iron Pipe Co.
125 tons, Thirty-fifth avenue, S. W., Seattle, to United States Cast Iron Pipe & Foundry Co.

CONTRACTS PENDING

32,500 tons, 8 and 12-inch line pipe for Prairie Pipe Line Co., from Panova, Okla., to Griffith, Ind.
5000 tons, 4 to 16-inch gas pipe, Allied Power & Light Co., New York.
9000 tons, 6 to 16-inch pipe and 450 tons of fittings and offsets for Milwaukee; all bids opened Dec. 28 rejected. New bids Jan. 12 on the entire quantity, as follows: 2500 tons of 6-inch, 2700 tons of 8-inch, 1800 tons of 12-inch, and 1500 tons of 16-inch pipe; 400 tons of special castings, and 50 tons of offsets.
2000 tons 8 to 16-inch cast pipe and 30 tons of special fittings for Boston; Warren Foundry & Pipe Co. low bidder.
1500 tons, 4 to 12-inch, class B, Providence, R. I.; bids to be opened Jan. 14.
1000 tons, 4 to 16-inch gas pipe for Providence Gas Co., Providence, R. I.
144 tons, 6 and 8-inch class B, improvement Catocin drive, San Diego, Calif. Bids opened.
140 tons, 4 to 16-inch class B, improvement Taylor street, San Diego, Calif. Bids opened.
140 tons, 4 to 8-inch class C, improvement Fanuel street, San Diego, Calif. Bids Jan. 14.
110 tons, 4 and 6-inch class B, Okanogan, Wash. Bids Jan. 15.
103 tons, 2 to 6-inch class B, improvement Meade street, San Diego. Bids opened.
Unstated tonnage, 200 miles of 6-inch for line from Lea county, New Mexico, to El Paso, Tex. For the El Paso Natural Gas Co., El Paso, Tex. Smith Bros. Inc., Dallas, Tex., has the contract.

Tin Plate

Bookings Fairly Heavy—Operations at 95 to 100 Per Cent

TIN PLATE PRICES, PAGE 151

Pittsburgh Jan. 8.—Some tin plate producers continue to operate full. The general average for the district is 95 to 100 per cent. Bookings are fairly heavy and mills have enough business to run at current rates for several months. Practically all contracts for first half have been signed. Tin plate continues $5.35 per 100-pound box, Pittsburgh.

Refractories

Steady Demand in Small Lots at Unchanged Prices

REFRACTORIES PRICES, PAGE 152

Pittsburgh, Jan. 8.—Demand for refractories has been fairly steady but characterized more by small-lot orders than large individual commitments. Consumers continue to maintain stocks at a minimum but since repair work has been active, material has been moving fairly freely. Jones & Laughlin Steel Corp. will start soon to reline a blast furnace blown out several weeks ago. Export business is steady. Prices are unchanged at $43 to $46 for first quality fire clay brick, with silica brick at $43 and magnesite brick $65. Total 1928 business made a favorable showing with that of 1927.

Sheets

Shipments Resume on Substantial Scale—Higher Finishes in Demand—Mill Operations Hold

SPECIFICATIONS for sheets are increasing after the holiday lull, especially those for the higher finishes. Consumers of the common grades specified heavily on fourth quarter contracts, and shipments to them are not as large as in the latter part of December. Some users are not contracting, preferring to take their chances in the open market.

SHEET PRICES, PAGE 151

Pittsburgh, Jan. 8.—Sheet producers' books are well filled, and deliveries are deferred three or more weeks on all except the most common grades. On blue annealed sheets two weeks or slightly less is the general delivery promise. New business is steady and gives promise of gradual expansion, particularly that from the automotive field. Motor car builders and parts manufacturers have been taking fair tonnages. Prices are strong and shading is rare. On current business mills are receiving 2.85c, base, Pittsburgh, for sheet mill black, 3.00c for tin mill black, 3.60c for galvanized, 2.10c for blue annealed, and 4.10c for autobody. Practically all fourth quarter contracts were specified fully. Mill operations generally are around 90 per cent.

New York, Jan. 8.—Sheet tonnage still is being shipped on fourth quarter contracts, specifications for which were placed in December. This tonnage is expected to take care of most January requirements. Current prices are 2.10c, base, Pittsburgh, for blue annealed, 2.85c for black, and 3.60c for galvanized. The prices are $2 a ton higher than those generally prevailing in fourth quarter. Some new business has been booked at the new level, but the principal test is to come. Jobbing mills making blue annealed sheets report competition from wide strip steel, blue annealed sheets being quoted at 2.10c and wide strip at 2.00c, base, Pittsburgh.

Buffalo, Jan. 8.—Heavy sales of all grades of sheets have been made for first quarter. Prices are firm, with 2.85c, base, Pittsburgh, the minimum on black and 4.10c on full finished. A strike of 1800 workers at a Buffalo sheetworks was ended after a few hours and without serious interruption to production. Arbitrators will settle the differences, reported due to a slight downward revision of wages.

Youngstown, O., Jan. 8.—The Falcon works, Niles, O., of the Empire Steel Corp. resumed Jan. 7 with eight full-finished mills. This makes a total of 115 units operating this week, out of a total of 128 units in this district, or 89 per cent of capacity. Full-finished mills are scheduled some weeks ahead. Mills making common grades also have considerable business specified on contract but could take on a little more. Some buyers are holding back specifications until the market has been more clearly defined. Makers of autobody sheets look for the peak in demand by the end of this month. While there had been some question as to galvanized sheets keeping to the level of 3.60c, Pittsburgh, this doubt now appears settled. Common black sheets bring 2.85c; autobody, 4.10c, and blue annealed, 2.10c.

Cleveland, Jan. 8.—Because of the lull in specifications, incidental to inventory and holiday time, several sheet makers caught up on deliveries and now occupy an easier position. Others still have good backlogs, particularly on full finished sheets, metal furniture stock and other highly finished material. Bodies for the new Chevrolet six, now produced at the rate of 3000 daily, call for large quantities of sheets. Numerous customers have deferred contracting at the new and higher figures which seem to be universally named. These prefer to buy in the open market and take their chance on another price increase.

Chicago, Jan. 8.—Sheet mills are resuming at 80 to 85 per cent following the year-end repair period. Deliveries have eased to a marked extent. Large consumers have contracted for first quarter, but many small buyers have obligations only to Jan. 15 and shortly after. Producers are not satisfied with present quotations, pointing out that galvanized and blue annealed sheets are $2 to $3 a ton below a year ago, while black sheets are about $2 a ton off. Chicago delivered quotations are steady at 3.00c for No. 24 black; 3.75c for No. 24 galvanized; and 2.25c for No. 10 blue annealed.

Philadelphia, Jan. 8.—Specifications on fourth quarter sheet contracts were unusually heavy in December. Most mills are operating full, with much tonnage unshipped. A full test of new sheet prices is not expected during January.

Timken Plans New Mills

Timken Roller Bearing Co., Canton, O., will build a tube and steel mill to enlarge its facilities for production of railroad equipment bearings. A site has been bought near the present plant at Gambrinus, O., and construction will be started at once. The first unit will be 320 x 450 feet and other units are planned to follow immediately.

Structural Shapes

End-of-Year Activity Promises to Carry Forward Well Into 1929—Huge Aggregate Tonnage Pending—Awards Fairly Numerous

MOMENTUM of the active windup to 1928 in structural awards appears to be carried forward this month. Awards are fairly numerous but projects pending, showing promise of early closing involve a huge total. Approximately 200,000 tons is the aggregate in New York. Between 35,000 and 50,000 tons is the Cleveland total. Small jobs predominate in Pittsburgh, Buffalo, Boston and elsewhere. About 5000 tons were let in eight jobs in California, involving from 100 to 2000 tons each. Eleven projects to come up for immediate attention in New York, include the 16,000-ton Lehigh warehouse and a 13,000-ton job in Brooklyn. More remote jobs there are the 40,000-ton subway and the 25,000-ton elevated roadway. Mills report that specifications are improving.

STRUCTURAL SHAPE PRICES, PAGE 151

New York, Jan. 8.—While the present credit situation may exert a restrictive influence, considerable structural work is under contemplation for early letting. In fact, among the larger jobs, 11 will take close to 90,000 tons, as listed in an accompanying column.

Smaller jobs bring the total up to around 130,000 tons for action this quarter. The 40,000 tons of subway work and 25,000 tons for the first unit of the westside elevated roadway bring the aggregate almost to 200,000 tons.

Shape prices appear firm at 2.145c to 2.195c, New York. Quotations on fabricated material are stronger.

Boston, Jan. 8.—Quietness continues in structural lines. Fabricators view bright prospects and are optimistic. Price firmness is a feature. Two awards, 240 and 100 tons respectively, are noted. A fairly high total of odd tonnage was figured.

Philadelphia, Jan. 8.—Shape business has not yet recovered after the holiday slowdown. Present operations are below the fourth quarter rate. New lettings, however, are expected to have a beneficial effect. Shape prices are somewhat weaker in that 2.00c, base, eastern mill, now is being done more frequently on carloads and less than carloads while 1.90c, base mill is a price met rather frequently. Above prices continue subject to differentials on large tonnages. Current market on carloads is around 2.00c to 2.06c, base, delivered Philadelphia.

Pittsburgh, Jan. 8.—Fabricated structural steel is quiet although a fair number of jobs are pending. The majority involves small tonnages. Prospects for industrial construction during the year are regarded as promising. Specifications for plain structural material are steady, little change being noted since the first of the year. Plain material continues 1.90c to 2.00c, Pittsburgh.

Cleveland, Jan. 8.—Just prior to the year's close the local office of McClintic-Marshall Co., witnessed an influx of structural awards, totaling about 9000 tons. Included were 3000 tons for a tire plant at Gadsden, Ala., 4350 tons for a bridge at Cleveland, 1500 tons for a glass plant near Toledo, O., and 430 tons for a bridge for the Nickel Plate railroad. A number of projects, involving 35,000 tons or more, are up for first quarter consideration.

Chicago, Jan. 8.—Mill deliveries on plain structural material have become easier in the past 10 days. Shipments are prompt to three weeks. Specifications comprise miscellaneous orders, mostly for lighter plain material. Fabricators maintain well balanced inventories of stock sizes. Among outstanding jobs is the 6000-ton Northwestern Bank building at Minneapolis. Revised bids were received Dec. 31 for the court house at Denver. Some first quarter and January-February tonnage is being contracted on the basis of 2.00c to 2.10c, Chicago.

Awards Compared

	Tons
Awards this week	31,265
Awards last week	22,475
Awards two weeks ago	38,045
Awards this week in 1928	58,243
Average weekly awards, Dec.	35,000
Average weekly awards, 1928	39,082
Average weekly awards, 1929	26,870
Total awards to date, 1928	85,668
Total awards to date, 1929	53,740

CONTRACTS PLACED

5500 tons, grade crossing elimination, at Philadelphia, Reading Co., to Phoenix Bridge Co.

4350 tons, bridge work, Euclid avenue, East 105th street, territory, Cleveland, for Cleveland Union Terminals Co., to McClintic-Marshall Co.

3000 tons, plant at Gadsden, Ala., Goodyear Tire & Rubber Co., Akron, O., to McClintic-Marshall Co.

2500 tons, toll bridges for Alabama, to be fabricated in the Chicago district. Total award will be about 12,000 to 14,000 tons.

2000 tons, power house, Southern California Edison Co., Long Beach, Calif., to Llewellyn Iron Works.

2000 tons, community center, Hershey, Pa., to Belmont Iron Works.

1000 tons, terminal, Flatbush, Long Island, N. Y., to an independent fabricator.

1000 tons, club, Sixth street, Los Angeles, to Union Iron Works.

1000 tons, Overpeck bridge, State Highway department, New Jersey, to Phoenix Bridge Co.

900 tons, 21-story apartment, 322 East Fifty-seventh street, New York, to Hay Foundry & Iron Works.

800 tons, Montgomery county court house, Norristown, Pa., to Montgomery Iron & Steel Co.

800 tons, plant building, Staley Mfg. Co., Decatur, Ill., to Mississippi Valley Structural Steel Co.

800 tons, memorial building, Columbia university, New York, to Levering & Garrigues Co.

750 tons, Kelvin Park and Hawthorne junior high schools, Chicago, to Wendnagel & Co.

650 tons, theater, San Diego, Calif., to Llewellyn Iron Works.

600 tons, 14-story loft, 353 West Thirty-seventh street, New York, to A. E. Norton Inc.

600 tons, 10-story apartment for Bing & Bing, 432 East Fifty-second street, New York, to A. E. Norton Inc.

500 tons, building, Monarch Tractor Co., Springfield, Ill., to Illinois Steel Bridge Co.

500 tons, bridge, El Paso, Tex., to Virginia Bridge & Iron Co., through Stone & Webster Inc.

500 tons, bridge, Hackensack river, New Jersey, to American Bridge Co.

430 tons, bridge, Nickel Plate railroad, East Thirty-seventh street, Cleveland, to McClintic-Marshall Co.

400 tons, building for Kress Box Co., Pittsburgh, to Jones & Laughlin Steel Corp.

400 tons, warehouse, Emeryville, Calif., for Paraffine Companies, to Judson-Pacific Co.

350 tons, textile mills, Rockbridge Textile Co., at Craigsville, Augusta Springs and Goshen, Va., to Virginia Bridge & Iron Co.

250 tons, Denver avenue, viaduct, Portland, Oreg., to unnamed interest. General contract to Lindstrom & Feigenson, Portland.

240 tons, Somerville, Mass.; warehouse, to Boston Structural Steel Co.

200 tons, addition to Namm department store, Hoyt street, Brooklyn, N. Y., to A. E. Norton Inc.

200 tons, bank, Louisville National Bank & Trust Co., Louisville, Ky., to Snead Architectural Iron Works.

200 tons, hangar, Pan American Airways, Miami, Fla., to Virginia Bridge & Iron Co.

200 tons, conveyor, etc., Majestic Collieries, Majestic, Ky., to Virginia Bridge & Iron Co.

200 tons, church, Franklin and Highland avenues, Los Angeles, to McClintic-Marshall Co.

175 tons, sulphur plant, J. G. White Engineering Co., Boling, Tex., to Virginia Bridge & Iron Co.

150 tons, pattern and storage building, Mathieson Alkali Works, Saltville, Va., to Virginia Bridge & Iron Co.

150 tons, hotel, Calexico, Calif., to McClintic-Marshall Co.

100 tons, warehouse, Wilmington, Calif., for Pacific Borax Co. to Llewellyn Iron Works.

100 tons, Lycoming street bridge, Philadelphia, to Bethlehem Steel Bridge Corp.

100 tons, hospital building, H. A. Lucas, Charlottesvill, Va., to Virginia Bridge & Iron Co.

100 tons, Cambridge, Mass., hospital improvements, to Boston Structural Steel Co.

CONTRACTS PENDING

89,800 tons, estimated as required by the following 11 projects in New York City, contemplated for action in the relatively near future:

16,000 tons, Lehigh Valley warehouse, lower west side previously noted but now appear-

ing more active; Westcott & Mapes, architects, Woolworth building.

13,000 tons, public library, Prospect Park plaza, Brooklyn,, plans nearing completion; Raymond F. Almirall, architect, 12 East Forty-sixth street, Manhattan.

11,000 tons, office building, 741 Fifth avenue.

10,000 tons, 50-story office, Forty-first street, between Broadway and Seventh avenue.

8000 tons, apartment, 53 West Fifty-eighth street.

6000 tons, apartment, East river, Forty-eighth and Forty-ninth streets.

6000 tons, Lenox Hill hospital, Park avenue, Seventy-sixth to Seventy-eighth streets.

6000 tons, American Exchange-Irving National bank building, 1-7 Wall street.

5600 tons, office building, Varrick and Canal streets.

5000 tons, loft, Sixth avenue, Twenty-sixth to Twenty-seventh streets, L. I. Broog, architect.

3,200 tons, power house for New York Edison Co., 801 East Fourteenth street.

13,000 tons, commercial building, the Reading Co., Philadelphia. General contract to Wiliam Steele & Sons Co.

6000 tons, Northwestern bank building, Minneapolis; bids in Jan. 3.

5000 tons, court house, Denver; revised bids Dec. 31.

5000 tons, two Lefcourt apartments, Fifty-seventh and Fifty-egihth streets, New York, respectively. Action indefinitely postponed.

3000 tons, Lefcourt office building, Fortieth street and Madison avenue, New York, contemplated.

1500 tons, Abraham Lincoln hotel, Reading, Pa.

1200 tons, chipping, grinding and pickling buildings, Central Alloy Steel Corp., Massillon, O.; bids in Jan. 5.

1000 tons, Jewish synagogue, East 122nd street, New York.

1000 tons, soap plant at Baltimore, for Procter & Gamble Co., Cincinnati. General contract to be awarded soon.

1000 tons, building, Bing Furniture Co., Cleveland. Bids close Jan. 14.

1000 tons, state highway bridge, Dover, N. J. A. Guthrie, St. Paul is low bidder.

800 tons, Hotel Sterling, Wilkes-Barre, Pa.

700 tons, 16-story hotel for J. J. Furman, New York.

600 tons, (300 tons each) Louis Aggasiz and Robert Fulton schools, Cleveland. Reaugh Construction Co. released from contract because of error. New general contract to be let this week.

600 tons, apartment, East Fifty-second street, New York.

500 tons, bridge, New York Central railroad, New York.

300 tons, Brooklyn College of Pharmacy, Brooklyn, N. Y.; bids to be opened around Jan. 15.

300 tons, Delaware state bridge.

275 tons, Kaskaskia river bridge, Carlyle, Ill., for Illinois highway commission; Clinton Bridge Co., Clinton, Iowa, low bidder.

265 tons, bascule bridge, Newport, Del.

200 tons, building, Rhode Island Insurance Co., Providence, R. I.

200 tons, 3-story department store, Sears-Roebuck & Co., Grand avenue, Portland, Oreg., costing $250,000. General contract awarded L. H. Hoffman, Portland.

180 tons, boiler house, Renton, Wash., plant, Puget Sound Power & Light Co. Bids in.

160 tons, Children's courthouse, the Bronx, New York.

150 tons, hotel addition, Pittsfield, Mass.; plans ready about Jan. 15. A. H. Lavalle, architect.

125 tons, freight house, New York, New Haven & Hartford railroad, Boston.

100 tons, addition to nurses home, St. John's hospital, Brooklyn, N. Y.

110 tons, berth 174, San Pedro, Cal. Bids in.

Chicago Steelworks Rate Is Expanding

Chicago, Jan. 8.—Steelworks activity has been increased slightly in the Chicago district owing to the stepping up of operations in departments producing track fastenings and to increased rail mill operations. The operating rate for the district is 80 to 85 per cent of ingot capacity. Twenty-four of the 36 steelworks blast furnaces in the district are active. The blast furnace rate is the same as a year ago, but the general rate of operations for the district is nearly 10 points higher than last year.

Concrete Bars

Sectional Activities Afford Contrasts—East Is Particularly Active As Is Far West

CONTRASTS are evident in the concrete bar market, the extreme East and the far West reporting numerous jobs let but Pittsburgh-Buffalo-Cleveland territory is developing little else than small, inconsequential tonnages. A water tunnel in Brooklyn, N. Y., takes 3000 tons; a viaduct at Portland, Oreg., 557 tons. Prospects are bright at Chicago for apartments, schools, etc.

REINFORCING BAR PRICES, PAGE 151

New York, Jan. 8.—Concrete bar jobbers have made slight changes in their prices on warehouse sales in this territory. These apply to certain consuming districts immediately adjacent to New York and increase the prices somewhat to cover the higher cost of truck deliveries. The price on New York warehouse service in the immediate metropolitan district continues to range from 2.74c, base, delivered at consumers' plants in carloads, to 3.25c for lots of less than two tons.

On current business in mill shipments the prices are shown to be quite firm. Most of the business is on the basis of 2.25c, base, Pittsburgh, for cut lengths. Some sales continue to be made at 2.00c, base, Pittsburgh, for mill lengths. Current lettings in this territory are fair. A considerable amount of tonnage is in prospect.

Boston, Jan. 8.—Odd lots engage the interest of reinforcing bar producers. Tonnages have been sufficiently large to keep various interests busy. The only award of the past week was for 125 tons to go into a new building for the Massachusetts General hospital. Local interests expect some good job to come up in the next few weeks.

Pittsburgh, Jan. 8.—Concrete bars are quiet. The lack of activity is considered seasonal and for some sellers is an improvement over a year ago. Awards and inquiries are restricted to small tonnages. Some distributors are adding to their stocks following the inventory period. Prices continue 2.25c, Pittsburgh, for cut lengths and 2.00c for stock lengths.

Buffalo, Jan. 8.—Demand for reinforcing bars is slow. Sales and new inquiries have been confined to lots less than 100 tons at a time. Steelworks producing reinforcing bars are on light production schedules. Small lots bring 2.615c, Buffalo delivery.

Chicago, Jan. 8.—Reinforcing bar fabricators are more encouraged over the outlook for the next 60 days. Prices also are more stabilized. Bars for several large apartment houses have become active, including one for 550 tons on Columbia avenue, Chicago. The board of education took bids today on 700 tons for the Von Steuben school here. Billet bar fabricators are quoting 2.35c as a minimum on 100 tons or more.

Awards Compared

	Tons
Awards this week	8,631
Awards last week	3,478
Awards two weeks ago	2,500
Awards this week in 1928	6,298
Average weekly awards, Dec.	2,878
Average weekly awards, 1928	6,189
Average weekly awards, 1929	6.055
Total awards to date, 1928	18,148
Total awards to date, 1929	12,109

CONTRACTS PLACED

3000 tons for water tunnel from Yonkers to Brooklyn, N. Y., to Pittsburgh Screw & Bolt Corp., through Patrick McGovern Inc. Includes 1200 tons square twisted rods upset and threaded; 500 tons square twisted hoops and bent bars; 1200 tons deformed bars cut and bent and 100 tons sleeve nuts for rods.

800 tons, building, Hoffman Beverage Co., Newark, N. J., to Jones & Laughlin Steel Corp., through Turner Construction Co.

700 tons, St. Mark's cathedral, Seattle, to Northwest Steel Rolling Mills.

650 tons for Twenty-second street viaduct, Birmingham, Ala., to Concrete Steel Co.

557 tons, Denver avenue viaduct, Portland, Oreg., to unnamed interests. General contract to Lindstrom & Feigenson, Portland.

400 tons, subway section 1, route 108, Brooklyn, N. Y., to National Bridge Works, through Triest Contracting Corp.

400 tons, high school, University City, Mo., to Laclede Steel Co.

300 tons, plant, Chase Brass & Copper Co., Cleveland, to Paterson-Leitch Co.

271 tons, paving in Imperial county, Calif., to unknown interest.

235 tons, Deaconess hospital, St. Louis, to Missouri Rolling Mills Corp.

225 tons, building, Western Electric Co., Kearny, N. J., to Joseph T. Ryerson & Son Inc., through the Austin Co.

191 tons, improvement Laguna Honda boulevard, San Francisco, to unknown interest.

175 tons, Mary institute, St. Louis, to Missouri Rolling Mills Corp.

165 tons, Moreland Court apartment, Cleveland, to Truscon Steel Co.

125 tons, building, Massachusetts General hospital, Boston, to Concrete Steel Co.

121 tons, Wolf Point bridge, Helena, Mont., to Missouri River Valley Bridge Iron Co.

113 tons, paving in Los Angeles county, Calif., to unknown interest.

103 tons, bridge, Pine Valley creek, San Diego county, Calif., to unknown interest..

100 tons, office building, Great Northern railroad, Seattle, to Pacific Coast Steel Co.

CONTRACTS PENDING

1300 tons for Internal Revenue Department building, Washington.

1200 tons, upper dam, New England Power Co.,

Fifteen Mile Falls, between Vermont and New Hampshire on the Connecticut river. Lower dam, taking larger quantity, to develop later.

700 tons, Von Steuben school, Chicago; bids Jan. 7.

550 tons, apartment building, Columbia avenue, Chicago.

500 tons, incinerator building, Brooklyn Ash Removal Co., Brooklyn, N. Y.; Lustbader Construction Co. low bidder on general contract.

400 tons, building, Pines Winterfront Co., Chicago; William J. Scown Building Co. general contractor.

250 tons, buildings, State Institution for the Feeble Minded, Apple Creek, O., Herbert R. Briggs, state architect, Columbus, O., has received 60 bids, covering nine combinations.

175 tons, school, Beach street, San Francisco. Bids in.

140 tons, Los Angeles, specification 1055-W. Concrete Engineering Co., low bidder.

110 tons, Kaskaskia river bridge, Carlyle, Ill., for Illinois highway commission; Clinton Bridge Co., Clinton, Iowa, low bidder.

100 tons, building, Murray-Ohio Mfg. Co., Cleveland. General contract to Dresser Co., Cleveland.

Tonnage unstated, Tremont street bridge, Bronx, New York; bids being taken by department of plants and structures, New York.

Iron Ore

Stocks at Lake Erie Ports 909,000 Tons Less Than Year Ago

IRON ORE PRICES, PAGE 152

Cleveland, Jan. 8.—Iron ore supplies on dock at Lake Erie ports Jan. 1 amounting to 5,695,220 tons were 909,119 tons less than the balance Jan. 1, 1928, according to the Lake Superior Iron Ore association. Receipts and shipments for the season, and dock balances are reported as follows:

	Receipts	Shipments	Dock balance Jan. 1, '29
Buffalo			
No. Tonawanda			
Port Colborne	4,337,313	20,899	3,433
Erie	653,233	666,161	59,645
Conneaut	8,437,401	8,238,239	1,734,035
Ashtabula	6,376,035	6,342,403	1,996,654
Fairport	1,839,171	1,880,855	398,610
Cleveland	9,375,764	6,172,515	1,081,366
Lorain	3,423,111	1,703,256	71,538
Huron	1,010,927	1,035,557	387,225
Toledo	1,503,387	836,082	62,714
Total	36,956,342	26,895,967	5,695,220
Comparative total 1 year previous	36,552,791	26,386,726	6,604,339

Sharon Votes on Retiring Preferred Stock

Pittsburgh, Jan. 8.—Stockholders of the Sharon Steel Hoop Co., Sharon, Pa., will meet March 5 to authorize an increase in the common stock capitalization sufficient to retire preferred shares. Preferred stock to the extent of $999,700 of 8 per cent shares of $50 par value is outstanding. It is callable at $55. Authorized common stock outstanding totals $15,000,000 of $50 par.

The Sharon company acquired about 11 acres adjacent to its Sharon plant a year ago. On this new area new mill buildings housing new pickling and galvanizing departments and a cold-rolled steel plant have been erected. The new construction marks the first major step in a complete modernization of the plant and also the company's entry into the cold-rolled strip business. A continuous, electrically-driven, hot-strip mill is expected to be in operation by March.

Rails, Cars

Car Buying Makes Auspicious Start—Few Small Rail Purchases Noted

CAR lettings take precedence over rail awards, although track fastening business remains a feature. Missouri Pacific bought 3080 of its 3120-car inquiry; Santa Fe placed 750; Wheeling & Lake Erie will buy 1100 and an eastern road lists 1766. About 16,000 cars are pending in the West and perhaps 10,000 will be placed in next 60 days. Eastern roads too will be active buyers.

RAILROAD TRACK PRICES, PAGE 152

Chicago, Jan. 8.—Chicago district rail mill operations continue at the increased rate of 75 to 80 per cent. Mills are well scheduled for 90 days. Several small lots of rails asked for aggregate 7000 to 8000 tons. Heavy buying characterizing the track fastenings market for several months, continues. From 12,000 to 15,000 tons were awarded last week, and about 15,000 to 16,000 tons are on inquiry. Tie plates continue to be quoted here at $43, despite some concessions in the Southwest. Mills are stepping up operations in track fastenings departments.

About 16,000 miscellaneous freight and passenger cars are pending in western markets. Estimates are that the next 60 days will see additional inquiries and awards totaling 8000 to 10,000 cars, including an expected inquiry from Chicago, Milwaukee, St. Paul & Pacific. The scheduling of heavier specifications of car shops for finished steel has been particularly marked in the past two weeks. Missouri Pacific distributed orders for 3000 cars, leaving 120 of its inquiry pending. Santa Fe awarded 750 stock cars. Southern Pacific is inquoring for three observation and 10 lounge cars.

Philadelphia, Jan. 8.—All bidders named regular market prices on track accessory tonnage for the Pennsylvania on which bids were opened Jan. 3. This road will open bids on large tonnage of axles Jan. 16. Other roads distributed good accessory business this past week.

An inquiry from the Maine Central for 1000 box cars features the eastern car market. Approximately 14,000 freight and 225 passenger cars now are pending throughout the country.

Pittsburgh, Jan. 8.—Baltimore & Ohio has awarded track fastenings to accompany its recent order of 90,000 tons of rails. The Erie has also placed companion material for its recent rail order. Fastening production has increased recently although the trend is only of a seasonal nature and generally not heavier than usual for this period. Light rail demand is fairly steady and December tonnage in some cases showed a gain over November. Railroad spikes hold at 2.80c, Pittsburgh.

Cleveland, Jan. 8.—A Pittsburgh district railmaker has booked 3500 tons for the Wheeling & Lake Erie railroad and 700 tons for the Akron, Canton & Youngstown.

CAR ORDERS PLACED

Atchison, Topeka & Santa Fe, 750 stock cars to Pennsylvania Car Co.

Chicago, South Bend & South Shore, five motor cars and five passenger trailers to Standard Steel Car Co.

Chilian State railways, 20 passenger cars to a German car builder.

Fisher Lumber Co., 20 skeleton lumber cars to American Car & Foundry Co.

Michigan Limestone & Chemical Co., 10 dump cars to Koppel Industrial Car Co.

Missouri Pacific, 3000, including 1000 automobile cars, to Mt. Vernon Car & Mfg. Co.; 1000 box cars to American Car & Foundry Co.; 500 stock cars to General-American Car Co., and 500 hoppers to Standard Steel Car Co.; 20 dump cars to Western Wheeled Scraper Co., and 60 cabooses to American Car & Foundry Co.

Pittsburgh Steel Co., four air dump cars to Koppel Industrial Car Co.

Reading, five dump cars to Koppel Industrial Car Co.

Timken Roller Bearing Co., one dump car to Koppel Industrial Car Co.

CAR ORDERS PENDING

Chesapeake & Ohio, 125 caboose cars.

Illinois Central, 100 drop bottom gondolas.

Maine Central, 1000 box cars.

New York, New Haven & Hartford applied at interestate commerce commission, Washington, for authority to issue $3,497,912 for new equipment certifications. Purchases will include 1591 steel underframe box cars, 20 multiple-unit passenger cars, 95 caboose, 25 each flanger and milk cars, 10 steel transformers, etc.

Southern Pacific, three observation and 10 lounge cars.

Southern Pacific, 13 coaches.

Wheeling & Lake Erie, 250 to 1000 steel gondolas and 100 steel frame flats.

Plant Is Explosion-Proof

General Electric Co. has erected on the outskirts of Pittsburgh, Mass., what is said to be an explosion-proof building, to be used by the molded insulation compound department. The structural steel is electrically welded, as are the fire escapes. The windows are hung on steel frames and held by bronze, friction clips, which are released by the first pressure of an explosion, and swing outward. M. M. Thranem superintendent of the plant building department, designed the structure.

Employes of the foundry of D. R. Sperry & Co., Batavia, Ill., have recently been given group insurance by the company.

The Market Section

Wire

New Prices Being Adhered to Generally—Heavy Specifications Give Full Backlogs

CONSUMERS of wire and nails specified heavily in December to obtain advantage of the lower prices prevailing then. This has filled mill books for January operations but has slowed current specifications. Opposition to the new prices has not been great. Under the new application of preferential discounts most users are excluded from them.

WIRE PRICES, PAGE 152

Chicago, Jan. 8.—Western wire mill operations continue at 62 to 65 per cent. Moderate first quarter contracting is being reported, many larger buyers having ordered for part or all of that period. Contract specifications are lighter than expected. The market is holding at $2.70, Chicago or western mills, for wire nails to large jobbers, and 2.55c, base, for bright plain wire. The dealer trade is 10 and higher.

Worcester, Mass., Jan. 8.—New wire business is arriving on first quarter contracts with prices firm at 2.75c, Worcester base, for plain wire to the dealer trade.

New York, Jan. 8.—Manufacturers of plain steel manufacturers' wire are on unusually busy schedules following heavy specifications against fourth quarter contracts received in December from consumers anxious to take advantage of prices. Several users already have placed first quarter contracts at 2.50c, base, Pittsburgh, to $2 a ton higher than the previous level. First quarter contracts for nails are being entered at a brisk rate. A feature is that the new $2.75, base, Pittsburgh, price is named in them. So far as these new contracts are concerned, the $2 differential to large jobbers is being allowed strictly to buyers who come within that category, and more than 90 per cent of the buyers, from a numerical standpoint, are on the full $2.75 basis.

Cleveland, Jan. 8.—Plenty of wire products contracts for the first quarter have been written at the new and higher figures but releases against these have not appeared. They probably will not for some time, since jobbers and users alike were liberally protected prior to the $2 rise. Some makers found it convenient to accept relatively heavy specifications on old arrangements for shipment at their convenience. Some have extended the time for acceptance of these specifications through February.

Pittsburgh, Jan. 8.—Wire and wire nail manufacturers entered the year with large bookings against fourth quarter contracts. Practically all consumers specified fully although overspecifying was not permitted. Mills in a number of cases will be able to run full throughout January although an accompanying decline in specifications is looked for. Little opposition has arisen to the $2 advance in wire and wire nail prices this quarter, practically all regular contractors having signed at current levels of 2.50c to 2.60c, Pittsburgh, to jobbers and to dealers, respectively, for plain wire, and $2.65 to $2.75 per 100-pound keg of wire nails.

Buffalo, Jan. 8.—Rigid adherence to the 2.60c, Pittsburgh base, for common wire to dealers is claimed by local producers, with a fair volume of first quarter bookings at this price. Demand for wire specialties is of substantial character.

Cold Finished Steel

Specifications Steady and Prices Remain Firm

COLD FINISHED PRICES, PAGE 151

Pittsburgh, Jan. 8.—Specifications for cold finished steel are steady and although the new year has not been marked by an upturn in demand, neither were final weeks of 1928 characterized by a decided slump. The fact that a number of automobile builders operated actively over the holiday period has kept the movement of material to this field at an even pace. Prices are firm at 2.20c, Pittsburgh.

Worcester, Mass., Jan. 8.—Cold-rolled strip mills are taking a moderate volume of specificatons against first quarter contracts. Strip consumers are buying close to requirements, but more often.

Cleveland, Jan. 8.—Specifications against cold finished bar contracts are being received, though some customers having specified well prior to inventories, have not commenced to reorder.

Strip

Mills Fall Behind on Delivery as Consumers Increase Needs—Prices Holding Firmly

DELIVERIES are becoming difficult for many producers of steel strip, as backlogs have increased under renewed buying. Four to five weeks are required in some instances. Prices are being held firmly and recent higher extras are being observed generally. Automotive demand are buying steadily and other users are also generally active.

STRIP PRICES, PAGE 152

Pittsburgh, Jan. 8.—Strip steel producers are booked for a number of weeks and are encountering difficulty in making satisfactory shipment. This applies particularly to cold rolled strip on which some mills are asking four to five weeks. Automotive interests are fair buyers although other industries are contributing substantially to current business. Prices are steady at 1.90c to 2.00c, Pittsburgh, for hot rolled strip up to 6 inches, and 1.80c to 1.90c for 6 1/16 to 24 inches. Cold rolled strip is 2.85c to 2.95c.

New York, Jan. 8.—Most first quarter strip requirements have been booked and prices show the market is firm. Hot rolled strip is on the basis of 1.90c, base, Pittsburgh, for 6 to 24 inches, and 2.00c, base, Pittsburgh, for less than 6 inches. The higher extras on narrow widths which recently were adopted continue to be adhered to generally, despite objections, principally concerns who buy hot strip for cold rolling.

Chicago, Jan. 8.—Hot rolled strip mills are booking more specifications for automotive frame and rim stock. Several mills are close to capacity but the average is 80 to 85 per cent. Cold rolled strip mills are operating at about 65 per cent, with backlogs for 15 days at least. Cold rolled strip prices are steady at 2.85c to 2.95c, Pittsburgh-Cleveland, for 3 tons and over.

Cleveland, Jan. 8.—Automotive use of strip steel continues heavy. Narrow hot strips particularly, are in active demand, deliveries still remaining a problem. Heavy backlogs permit heavy operations coupled with heavy shipments. On some such orders as high as 2.00c, Pittsburgh, has been realized; on others 1.90c has applied. Wide hot strip backlogs too are heavy, with Feb. 4 and even later datings already named. Cold strip demand seems to have slackened, most fender stock orders now going to sheetmakers. Some first quarter arrangements have been made at 2.85c, Pittsburgh.

Youngstown, O., Jan. 8.—Demand for hot-rolled strip steel has been developing gradually until mills report that it exceeds the former demand for cold-rolled. New demands come largely from makers of automotive parts makers. Consumption of cold-rolled strip continues fair. Quotations are steady.

Nonferrous Metals

Business in General Is Active and Prices Firm—Copper at 16.75c, Connecticut Basis —Zinc in Dull Market

Prices of the Week, Cents a Pound

	Copper: Electro delivered	Copper: Lake delivered	Copper: Casting refinery	Straits Tin: New York Spot	Straits Tin: New York Futures	Lead New York	Lead East St. Louis	Zinc St. Louis	98-99% Aluminum	Spot Antimony	Ingot Nickel
Jan. 2	16.62½	16.80	16.50	49.87½	49.75	6.65	6.50	6.35	23.90	9.65	35.00
Jan. 3	16.75	16.82½	16.50	49.25	49.25	6.65	6.50	6.35	23.90	9.65	35.00
Jan. 4	16.75	16.82½	16.50	49.25	49.25	6.65	6.50	6.35	23.90	9.65	35.00
Jan. 7	16.75	16.82½	16.50	49.87½	49.87½	6.65	6.50	6.35	23.90	9.62½	35.00
Jan. 8	16.75	16.82½	16.50	49.87½	49.87½	6.65	6.50	6.35	23.90	9.62½	35.00

NEW YORK, Jan. 8.—Business in most metals has been active in the past week and prices have been firm. Copper and lead buying has been outstanding and some business has been done in tin, but zinc has been dull.

Shipping schedules in most metals indicate that consumption will continue through the first quarter about on the record high levels established last autumn. In practically all lines the outlook is bright.

Copper wire prices went up ¼-cent on the first market day of the new year, but other brass and copper products were delayed in a corresponding rise until today. Mills are well booked through the first quarter on many products. Automobile companies have bought well into April.

Copper—The market opened the new year with sales at 16.50c, delivered Connecticut, the same as at the close of 1928, but before the day was over large sales had been made at 16.75c. Buying continued large for a day or two after that. The price has remained unchanged at the higher level ever since. Export business was large at the outset of the new year and on the day following the domestic change the official price was marked up to 17.00c, c.i.f. European ports. Much of the recent domestic buying was for April shipment, and it is believed domestic users are nearly covered for first quarter. Producers are similarly well booked.

Tin—The price dipped from over 50.00c a pound to 49.25c where it held for several days, and then as suddenly moved back to about 50.00c on large buying of standard tin on the metal exchange by speculators and good business in Straits tin with dealers and users.

Weakness of the market several days ago was due largely to the surprise that the trade had in the monthly statistics. Domestic deliveries were of good size, 7155 tons, while world visible supply was the largest in several years at an increase of practically 2500 tons, much more than had been expected. The latter caused some gloom in the market, but on Monday prominent speculative interests in London were reported to be buyers, and the market after its usual fashion faced about suddenly.

Zinc—Prime western has been extremely quiet the past week and unchanged at 6.35c, East St. Louis. A little business is done each day but not enough to attract attention. It is believed that galvanizers are fairly well covered for January needs but have most of their February and March requirements still to buy.

Lead—Buying has been large and well rounded out in the past week. Prices went up 15 points on the first day of the new year, with tremendous buying just before and just after the change.

Aluminum—Business is of large size and the outlook bright. Prices are unchanged and firm.—*Daily Metal Trade.*

Mill Products

Base prices cents per pound f.o.b. mill, except where otherwise specified

SHEETS	
Yellow brass (high)	21.25
Copper, hot rolled	25.87½
Lead, full sheets (cut ¼c more)	9.25
Zinc sheet (100-pound base)	$9.75
Zinc strip (100-pound base)	$8.75
Aluminum, flat sheets, up to 10 gage, 3″ to 72″ wide	31.30
SEAMLESS TUBE	
Yellow brass (high)	26.12½
Copper	27.25
RODS	
Yellow brass (high, full turnings)	19.00
Naval brass	21.75
WIRE	
Copper, car lots	18.37½
Yellow brass (high)	21.50

Old Metals

Dealers' buying prices, cents per pound

HEAVY RED BRASS	
New York	10.50 to 10.75
Chicago	11.25 to 11.50
Cleveland	11.25 to 11.50
HEAVY YELLOW BRASS	
Cleveland	8.25 to 8.50
ZINC	
New York	3.50
Cleveland	3.25 to 3.50
HEAVY COPPER AND WIRE	
New York	13.75 to 14.00
Boston	13.50 to 13.75
Chicago	13.50 to 13.75
Cleveland	13.75 to 14.00
RED BRASS BORINGS	
New York	10.00 to 10.25
YELLOW BRASS TUBING	
Cleveland	8.25 to 8.75
LIGHT COPPER	
New York	11.75 to 12.00
Chicago	11.75 to 12.00
Cleveland	11.75 to 12.00
LIGHT BRASS	
Boston	6.75 to 7.00
Chicago	8.00 to 8.25
Cleveland	6.50 to 7.00
ALUMINUM	
Clippings, Cleveland	18.00 to 18.50
Borings, Cleveland	8.75 to 9.25
Cast, Cleveland	12.50 to 12.75
Cast, Boston	10.50 to 11.00

Secondary Metals

Remelt aluminum No. 12	16.50 to 17.00
Brass ingot, 85-5-5-5	14.75 to 15.25

Coke By-Products

Toluol Supply Matches Demand—Sulphate of Ammonia Weak

New York, Jan. 8.—The light oil distillate market continues steady. Prices are unchanged, with demand in good volume. While trading in toluol is brisk, the scarcity of supplies does not appear as pronounced as a while ago. Sellers assert that for the present they are able to keep up with requirements in fairly good shape.

This slightly easier tendency with regard to supplies finds reflection in demand for commercial xylol. While good, trading in this product is not up to the volume of a month ago. Solvent naphtha and phenol both are rather featureless.

A weak spot in the by-product market is sulphate of ammonia. While prices are unchanged at $2.30, delivered, for domestic account and $2.20, port, in double bags for export, spot demand is slack with the outlook dull. Naphthalene, on the other hand, is in increasing demand by the drug trade for spring delivery. Both flakes and balls appear strong at current prices.

Coke Oven By-Products

Per Gallon at Producers' Plant in Tank Lots

	Spot
Pure benzol	$0.23
90 per cent benzol	0.23
Toluol (nominal)	0.40
Solvent naphtha	0.30
Commercial xylol	0.30
Per Pound at Producers' Plants in 250-Pound Drums	
Phenol	0.17
Per Pound at Producers' Plants	
Naphthalene flakes	0.05½ to 0.06½
Naphthalene balls	0.05½ to 0.06½
Per 100 Pounds Delivered	
Sulphate of ammonia	$2.30

Quicksilver Price Steady

New York, Jan. 8.—Quicksilver is quiet and steady at $122.50 a flask. This price is lower than a short time ago, as a little show of activity did not last.

Warehouse

Hoop and Band Bases Revised at Chicago When Recent Mill Extras Are Adopted—Nails and Sheets Raised at Pittsburgh

ACTIVITY among warehouses, is resuming at approximately the early December rate. Chicago jobbers change hoop and band bases while in New York talk about this possibility lessens. New extras are inaugurated at both points. Pittsburgh jobbers raise nails and sheets $2 per ton.

New York—Good business characterizes the local warehouse market. Prices generally are steady. Recent talk of a downward revision in the base on hoops and bands appears for the present to have subsided. Jobbers have revised size extras on these products to conform with a revision at the mills. The changes involve advances of $2 to $6 a ton.

Philadelphia—Jobbers have reduced base prices on hoops and bands out of stock, quoting hoops at 3.40c, base, delivered locally and bands at 3.15c, subject to quantity extras. They have adopted new warehouse size extras, based on recent revision in mill size extras, so that while base prices are lower, the average net prices are higher, with the increases noted particularly in the lighter gages.

Buffalo—Warehouse sales acquired momentum shortly after New Year's. January gives promise of placing jobber business on a solid foundation.

Pittsburgh—Jobbers are instituting higher prices on several iron and steel products in line with fourth quarter mill advances. Wire, nails and sheets are up $2 per ton. Business as yet has not recovered from the year-end letdown, although the outlook is promising. December activity was in some cases above November. Sellers adhere closely to quoted levels, and in some instances this has resulted in an increased income despite decline in volume.

Cleveland—After a short lull, nothing more than is expected during the holiday season, buying from warehouse is resuming at about the December rate. Orders are diversified, although small and numerous. Prices are firm.

Chicago—Buying of steel from warehouse stocks holds its steady pace, possibly slightly ahead of a year ago. Hot rolled hoops and bands now are being quoted at new prices, 3.20c and 3.75c, Chicago, respectively, declining from 3.65c and 4.15c. New extras also are in effect on hot rolled hoops and bands in line with hot strip extras announced Nov. 1, 1928 by the mills representing reductions, depending upon size and gage.

Warehouse Quotations in Cents Per Pound at Leading Market Centers

STEEL BARS

Baltimore	3.10c
Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Cleveland	3.00c
Detroit	3.00c
Ft. Worth	3.75c
Houston	3.00c
Los Angeles	3.30c
New York†††‡	3.25c
Philadelphia*	2.80c
Pittsburgh	2.90c
Portland	2.50c
San Francisco	3.15c
Seattle	3.00c
St. Louis	3.15c
St. Paul	3.25c
Tulsa	3.75c to 4.04c

IRON BARS

Baltimore	3.10c
Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Detroit	3.00c
Ft. Worth	3.75c
New York††	2.80c to 3.24c
Philadelphia*	2.80c
St. Louis	3.15c
Tulsa	3.75c to 4.04c

REINFORCING BARS

Baltimore	3.31c
Boston	3.265c to 3.50c
Buffalo	2.75c
Cincinnati	3.15c
Cleveland	2.25c to 3.00c
Detroit	2.30c to 3.00c
Ft. Worth	3.50c
Houston	3.00c
Los Angeles cl.	2.65c
Los Angeles lcl.	3.00c
New York	2.85c to 3.25c
Philadelphia	2.85c
Pittsburgh	2.75c to 3.175c
San Francisco cl.	2.00c
San Francisco lcl.	2.25c
Seattle	3.00c
St. Louis	3.15c
Tulsa	3.75c to 4.00c
Youngstown	2.30c to 2.60c

STRUCTURAL SHAPES

Baltimore	3.10c
Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland	3.00c
Detroit	3.10c
Ft. Worth	4.00c
Houston	3.25c
Los Angeles	3.30c
New York†††‡	3.25c to 3.30c
Philadelphia*	3.70c
Pittsburgh	3.00c
Portland	2.90c
San Francisco	3.15c
Seattle	3.00c
St. Louis	3.25c
St. Paul	3.35c
Tulsa	3.75c to 4.14c

PLATES

Baltimore	3.10c
Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland, ¼-in. and thicker	3.00c
Cleve., 3/16-in.	3.20c
Detroit	3.10c
Detroit, 3/16-in.	3.30c
Ft. Worth	4.00c
Houston	3.00c
Los Angeles	3.30c
New York‡‡	3.30c
Philadelphia*	2.70c
Phila., 3/16-in.*..	2.90c
Pittsburgh	3.00c
Portland	3.00c
San Francisco	3.15c
Seattle	3.00c
St. Louis	3.25c
St. Paul	3.35c
Tulsa	3.75c to 4.14c

NO. 10 BLUE ANNEALED

Baltimore	3.45c
Boston, 3/16-in.	3.915c
Buffalo	3.50c
Chicago	3.35c
Cincinnati	3.45c
Cleveland	3.25c
Detroit	3.35c
Ft. Worth	4.50c
Houston	3.90c
Los Angeles	4.00c
New York‡‡	3.90c
Portland	3.75c
Philadelphia*†	3.15c
Pittsburgh**	3.20c
San Francisco	3.90c
Seattle	4.00c
St. Louis	3.45c
St. Paul	3.75c
Tulsa	4.20c to 4.54c

NO. 24 BLACK SHEETS

Baltimore	3.10c to 4.00c
Boston	4.85c
Buffalo	4.20c
Chicago	3.80c
Cincinnati	3.90c
Cleveland	3.60c
Detroit	3.95c
Ft. Worth	4.70c
Los Angeles	4.90c
New York†††	3.90c to 4.00c
Philadelphia*†	4.00c
Pittsburgh**	3.80c
Portland	4.90c
San Francisco	4.95c
Seattle	5.00c
St. Louis	4.10c
St. Paul	3.95c
Tulsa	4.34c

NO. 24 GALVANIZED SHEETS

Baltimore	4.10c to 4.75c
Boston	5.60c
Buffalo	4.70c to 4.85c
Chicago	4.65c
Cincinnati	4.75c
Cleveland	4.45c
Detroit	4.75c
Ft. Worth	5.50c
Houston	5.30c
Los Angeles	5.30c
New York†††	4.60c to 4.75c
Philadelphia*†	4.75c
Pittsburgh**	4.55c
Portland	5.50c
San Francisco	5.40c
Seattle	5.50c
St. Louis	4.95c
St. Paul	4.90c
Tulsa	6.50c

BANDS

Baltimore	3.85c
Boston	4.015c to 5.00c
Buffalo	4.05c
Chicago	3.20c
Cincinnati	3.95c
Cleveland	3.65c
Detroit	3.65c
Ft. Worth	4.25c
Houston	3.65c
Los Angeles	4.15c
New York‡‡	4.00c
Philadelphia*	3.35c
Pittsburgh	3.60c
Portland	3.75c
San Francisco	4.10c
Seattle	4.00c
St. Paul	3.50c
Tulsa	4.50c to 4.66c

HOOPS

Baltimore	4.00c
Boston	5.50c to 6.00c
Buffalo	4.05c
Chicago	3.75c
Cincinnati	4.25c
Cleveland	3.65c
Detroit	4.15c
New York‡‡	4.50c
Philadelphia*	3.60c
Pittsburgh	4.50c
Seattle	5.00c
St. Paul	4.00c

COLD FINISHED STEEL

	Rounds, hexagons,	Flats, squares
Baltimore (c)	3.35c	3.85c
Boston	3.55c	4.05c
Buffalo	3.95c	4.45c
Chicago	3.60c	4.10c
Cincinnati	3.85c	4.35c
Cleveland	3.65c	4.15c
Detroit	3.85c	4.35c
Los Angeles (a)	4.50c	.....
New York	3.50c	4.00c
Philadelphia*	3.45c	3.95c
Pittsburgh	3.60c	4.10c
Portland (a)	4.75c	.....
San Fran. (a)	4.25c	.....
Seattle (a)	5.00c	.....
St. Paul (a)	3.85c	.....
Tulsa	4.76c	5.26c

(a) Rounds only.

COLD ROLLED STRIP

Boston, 0.100-inch, 500 pound lots	5.30c
Buffalo	5.85c
Chicago (b)	6.10c
Cincinnati	7.15c
Cleveland (b)	5.95c
Detroit	5.80c
New York	5.15c
Philadelphia (c)	5.00c

(b) Net base, straightening, cutting, boxing 1 ton or more. (c) Plus mill, size and quantity extras.

SWEDISH IRON AND STEEL

New York duty paid

Hollow drill steel	13.00c
Iron bars, rounds	6.10c
Iron bars, flats and squares	6.50c

*Plus quantity differentials. ‡‡Minus quantity differentials. ††Domestic bars. **25 or more sheets. *†50 or more bundles. †††Newark-Jersey City 4.00c on black and 4.70c on galvanized the more prevalent figures.

Pacific Coast

Year Begins with Heavy Buying — Pipe Inquiries Promise Much

CAST iron pipe and structural steel tonnages started the new year with unusual buying and exceeded the opening week of last year. A large tie plate order also was closed. Some foreign coke is on the way for delivery at various ports. A number of projects calling for steel products are being figured and an active season is in prospect along the coast.

San Francisco, Jan. 5.—(*By Air Mail*)—Trading in iron and steel products on the Pacific coast has started with a rush and large tonnage of cast iron pipe and structural steel shapes were booked. In addition the Southern Pacific Co. has placed close to 2,000,000 tie plates of two sizes, aggregating 7000 tons, with various producers. It is understood coast makers received a fair part of the business. Prices, on the whole, are holding fairly firm to the established levels.

Pig Iron and Coke

Dealers in pig iron and coke report a decided improvement in foundry operations in southern California, due primarily to increased activity in the oilfields. One rate of operations in the San Francisco district and the Pacific Northwest, however, has shown little improvement for several months. A shipment of foreign iron arrived in port this week and will be applied against contracts placed several months ago. Last week about 5000 tons of English by-product and beehive foundry coke was delivered to consumers,

Coast Pig Iron Prices

Utah basic	$25.00 to 26.00
Utah foundry	25.00 to 26.00
*German	24.25
*Indian	24.00 to 25.00

*C.i.f. duty paid.

about 2000 tons each going to Los Angeles and San Francisco melters and 1000 tons to Seattle users. Another shipment of Victoria beehive and Saxon by-product coke, 3000 tons, is due to arrive late in the month. Prices on English by-product coke continue unchanged $11.50 to $13 a net ton, delivered incoming dock, while English beehive is $15 to $16 a net ton. The navy department will open bids Jan. 15 for 256 tons of foundry iron for Mare Island and Puget Sound navy yards, most for the former yard. No change in quotations is reported.

Bars, Plates and Shapes

Demand for concrete bars appears to be improving and awards this week totaled 1874 tons, compared with 8665 tons for the first week of 1928. During the first week of last year 8500 tons was placed for the Coyote Point bridge at San Francisco. Included among the larger lots booked were 557 tons for a viaduct in Portland and 710 tons for seven highway projects in California. The navy department has placed 120 tons of rivet steel with an unnamed interest, for the Mare Island navy yard.

Plate awards this week were by no means heavy and aggregated 358 tons, compared with 775 tons for the first week of last year. The Beall Tank & Pipe Co. took 165 tons for a 14-inch riveted pipe line at St. Helens, Oreg. The only inquiry of importance before fabricators calls for 100 tons of 10 to 14-inch riveted pipe for the Terra Bella irrigation district at Terra Bella, Calif. Prices remain firm at 2.25c c.i.f. as a minimum.

Several shape awards were placed and included 2000 tons for a power house at Long Beach, Calif., 661 tons for a bridge at Helena, Mont., and 400 tons for a warehouse at Emeryville, Calif. Bookings for the first week of the year aggregated 5621 tons, compared with 4323 tons for the corresponding week in 1928. Plain structural material continues firm at 2.35c c.i.f.

Other Finished Material

A decided improvement in demand for cast iron pipe is noted and awards this week totaled 7375 tons, compared with 740 tons for the first week last year. Pending business exceeds 3900 tons, the largest project calling for 1350 tons for an improvement project in Los Angeles. Los Angeles has placed 102 tons of ¾ and 1-inch galvanized pipe with a Los Angeles distributor. The Standard Oil Co., San Francisco, has an inquiry out for 200 tons of 8-inch line pipe for use in the southern part of California. Pipe mill representatives are keenly interested in the inquiry the Pacific Gas & Electric Co., San Francisco, has put out for 50 miles of 16-inch gas line pipe totaling 7000 tons. This is for use in connection with the Ventura-San Francisco distributing system.

No action has been taken by the Standard Oil Co. on its inquiry for 4000 tons of tin plate. It is understood that 950 tons of 75 pound relaying rails for the Hawthorne, Nev., project will be purchased from the Southern Pacific Co.

Seattle Market Active

Seattle, Jan. 2.—Approximate figures covering steel placed in the Pacific Northwest last year show totals of 132,000 tons, compared with 125,000 tons in 1927. For last year the figures are: reinforcing, 37,000 tons; plates, 25,000 tons; structurals, 45,000 tons; pipe, 25,000 tons. In 1927 the figures were: 36,824, 14,130, 48,750 and 25,200 tons, respectively. The largest contract of last year was for the Longview bridge, involving 12,000 tons, booked by Bethlehem Steel Co.

Bars, Plates and Shapes

Both local steel mills ran through the holiday period without interruption having considerable work in hand, mostly small tonnages but a large aggregate. Last year developed a large volume and steadier operation than usual. Mill prices of reinforcing materials are firm at 2.20c, in marked contrast to a year ago when prices were being slashed. Merchant bar prices are steady at 2.35c.

Concrete bars awards this week totaled 800 tons. The largest booking, 700 tons for St. Mark's cathedral, was taken by the Northwest Steel Rolling Mills. Pacific Coast Steel Co. took an extra 100 tons involved in the new office building for the Great Northern railroad.

No large tonnages of plates have developed although wholesale jobbers are selling a fair volume of light plates for routine repair and tank work. Mill prices are unchanged at 2.25c.

Several large projects involving structurals are to be up for figures. Within a week a local fabricating plant is expected to receive the contract for furnishing 180 tons for the boiler house at Renton being erected by Stone & Webster for the Puget Sound Power & Light Co. Mill prices remain steady at 2.35c.

Finished Materials

Wholesale jobbers experienced the usual lull in buying during the holidays but the new year has opened actively. The volume of business in 1928 was not quite up to 1927 but the turnover was fairly satisfactory as a whole. Jobbing prices are unchanged.

Pipe awards this week totaled 407 tons, including 282 tons of De Lavaud for Friday Harbor, Wash., and 125 tons for Thirty-fifth avenue S.W., Seattle, booked by the United States Cast Iron Pipe & Foundry Co. Bids are under consideration for 3150 tons at Portland, 992 tons for Bellingham, more than 500 tons for Olympia, and 75 tons for Tukwila, while bids are to be opened this month for 108 tons at Chehalis, 100 tons for Okanogan and 20,000 feet for Toledo, Wash.

Old Materials

Steel scrap continues unchanged at $10 and $11, gross, prices prevailing at local mills. Ample supplies are being received but the market is reasonably strong. Japanese buyers are seeking steel scrap and are inquiring for steel steamers for scrapping in the Orient despite the comparatively large fleet of obsolete ships recently purchased for delivery in Japan. Cast iron scrap continues firm at $16 to $16.25 gross.

Birmingham, Ala. machinery makers are bidding on some heavy sugar machinery requirements for South America.

Discounts on Wrought Iron Pipe Cut

Reading Iron Co., Reading, Pa., has brought out a new card showing Pittsburgh basing discounts on its puddled wrought iron pipe, effective Jan. 2. The card, covering jobbers' carloads, represents a downward adjustment of prices:

Standard weight threads and couplings		Black Plus	Galvanized Plus
¼" and ⅜"	Butt	11	36
½"	Butt	23	5
¾"	Butt	28	11
1" and 1¼"	Butt	31	15
1½" and 2"	Butt	35	18
1¼" and 1½"	Lap*		
2"	Lap	23	9
2½" to 3½"	Lap	28	13
4" to 6"	Lap	30	17
7" and 8"	Lap	29	16
9" to 12"	Lap	26	11
Reamed and Drifted			
1" to 6"	2 points less than above		
Extra Strong, Plain Ends			
		Plus	Plus
¼" and ⅜"	Butt	13	48
½"	Butt	23	7
¾"	Butt	28	12
1" to 2"	Butt	34	18
1¼" and 1½"	Lap*		
2"	Lap	29	13
2½" to 4"	Lap	34	20
4½" to 6"	Lap	33	19
7" and 8"	Lap	31	17
9" to 12"	Lap	21	8
Double Ex. Strong, Plain Ends			
		Plus	Plus
½"	Butt	47½	59½
¾"	Butt	28	40
1"	Butt	34	46
1¼"	Butt	28	40
1½"	Butt	27	39
2" and 2½"	Lap	13	25
3" to 4"	Lap	8	17
4½" to 6"	Lap	9	18
8"	Lap	12	....

*Prices on application.

For cut lengths, special prices will be quoted upon receipt of specifications.

For extra strong and double extra strong pipe with threads and couplings, lower discounts 5 points from the plain-end price or 3 points for threads only.

Lengths over 22 feet when shipped in less than carload must be sold F.o.b. mill.

Large O. D. wrought iron pipe, random lengths, plain ends 14" to 20" O. D., prices on application.

Sheet and Tin Plate Mill Wages Unchanged

Youngstown, Jan. 8.—Sheet mill wages will remain unchanged through January and February. The average sales price of Nos. 26, 27 and 28 gage black sheets in November and December was 3.00c, as reported by representatives of the independent sheetmakers and of the Amalgamated Association of Iron, Steel and Tin Workers. The average price has remained at this level for a year. Sheet mill wages are 25½ per cent above base. Following are comparisons of price averages for periods designated:

Nov.-Dec.	3.00c		unchanged
Sept.-Oct.	3.00c		unchanged
July-Aug.	3.00c		unchanged
May-June	3.00c		unchanged
March-April, 1928	3.00c		unchanged
Jan.-Feb.	3.00c		unchanged
Nov.-Dec.	3.00c	—3	per cent
Sept.-Oct.	3.10c	+3	per cent
July-Aug.	3.00c		unchanged
May-June	3.00c		unchanged
March-April, 1927	3.00c	—3	per cent

Fire Jan. 7 badly damaged the church which the late E. H. Gary, chairman of the United States Steel Corp., built at Wheaton, Ill., as a memorial to his parents and from which his funeral was held.

Lights New Coke Ovens

Central Alloy Steel Corp., Massillon, O., started operation of a battery of 15 new by-product coke ovens at the United plant at Canton, O., Jan. 1. The new equipment was necessitated by the increased blast furnace production required for the company's high rate of current operations. With 62 ovens at Canton and 49 at Massillon, Central Alloy Steel Corp. now has a monthly capacity of 45,000 tons of blast furnace coke. Complete by-product plants, both at Canton and Massillon, supplement the coke producing equipment.

Yearbook of Industry Is Available at $1

FOR convenience of our readers, a few extra copies of the Yearbook of Industry, the Jan. 3 issue of IRON TRADE REVIEW, *have been printed.*

As long as they last, they will be supplied to subscribers in the United States and Canada, postpaid, for $1. *European subscribers may obtain copies from our office in Caxton House, Westminster, London, for five shillings, postpaid.*

The 320-page Yearbook of Industry is a reference volume of permanent value to anyone connected with the metalworking industries. In addition to stimulating, informative and authoritative leading articles dealing with important current business problems, complete statistics are presented covering iron and steel consumption, production, prices, wage rates, and a host of other basic industrial activities.

The advertising pages of the Yearbook constitute a comprehensive directory of American iron and steel products, machinery, industrial services, and shop equipment.

Installs Separate Drives

A mill drive of unusual interest, which now is being installed, is that for the 36-inch reversing universal slabbing mill at the Steubenville, O., plant of the Wheeling Steel Corp. This is the first instance in this country in which separate reversing motors are used for driving the horizontal and vertical rolls. The installation also represents the first reversing mill drive in this country having three generators operating in parallel.

Screw Products Makers To Discuss Costs

A survey of cost systems now being used in the screw machine products industry, by Dr. Arthur E. Swanson, will be a feature of the forthcoming annual meeting of the Screw Machine Products association to be held at the Great Northern hotel, Chicago, Jan. 16. The report of Dr. Swanson is based upon surveys of the systems of many plants in various parts of the country as well as questionnaires returned by more than 150 plants. Malcolm Baird, 232 Delaware avenue, Buffalo, is field secretary of the association.

Pig Iron

(*Concluded from Page* 153)

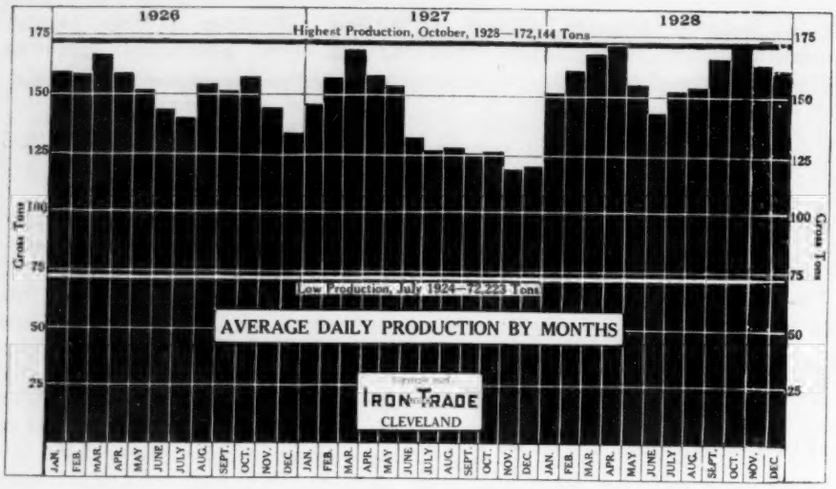
quick delivery. Shipments are going directly into consumption as inventory replacements are extremely light. The tonnage sold in the first seven days of January is surprisingly large, despite the heavy coverage for first quarter. Recent orders are largely supplemental to contract purchases. Several melters are buying into second quarter. The base price is strong at $20, Chicago, with Detroit and Toledo prices steady. Silvery sales are light. Charcoal iron users are well covered for first quarter, but spot business is developing.

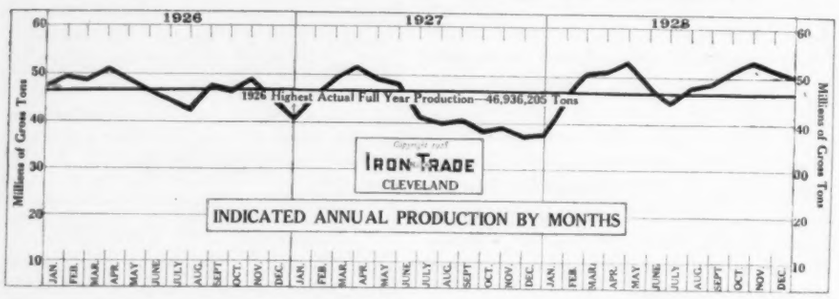
Birmingham, Ala., Jan. 8.—The pig iron market is strong, and melters are asking for steady delivery. Blowing in of the Sloss-Sheffield Steel & Iron Co.'s No. 1 city furnace will be followed by another furnace of the Republic Iron & Steel Co. by the end of the month. Several melters in the local district have resumed operations after several weeks shutdown, while others are speeding up production. Prices still range from $16.50 to $17, base, Birmingham.

Toronto, Ont., Jan. 8.—Inventory continues to retard Canadian pig iron business. Current demand is mainly in small lots. A few forward contracts were placed during the week, not exceeding 1000 tons. Most melters are covered for first quarter. Prices are firm.

Philadelphia, Jan. 8.—The pig iron market is fatured by numerous small and moderate sales of foundry iron, also by many new inquiries involving small lots. Part of the current inquiry calls for second quarter prices. Current prices are unchanged at $20.50 to $21, base, eastern Pennsylvania furnace. Shipments to foundries are heavy.

St. Louis Blow Pipe & Heater Co., St. Louis, has purchased control of Pecco Inc., manufacturer of unit heaters, and will consolidate the properties as one.





December Sets Ingot Record

DECEMBER steel ingot production figures compiled by the American Iron and Steel institute give the month the highest rating for any December in history and confirm 1928 as the record steel year. The December calculated total of 4,015,434 gross tons of open hearth and bessemer ingots raises the 1928 total to 49,853,225 tons, well ahead of the previous peak of 46,936,205 tons in 1926.

The December daily rate of 160,617 tons compares with 163,822 tons in November and 122,134 tons last December. The next highest December on record is that of 1926, when the daily average was 133,337 tons. On the basis of the daily rate of December, the month's production was at the rate of 50,000,000 tons annually.

For 1928 the daily production average stands at 160,300 tons. This compares with a rate of 139,543 tons in 1927 and the previous record of 150,920 tons in 1926. The December rate of operations was at 85.20 per cent of capacity, contrasted with 86.90 per cent in November and only 66.37 per cent in December, 1927. For 1928 as a whole operations were at 85.03 per cent, contrasted with 75.83 per cent in 1927.

Actual production of companies reporting for December give the open-hearth total as 3,305,087 tons and the bessemer 496,726 tons. For 1928 the actual open hearth tonnage reported was 40,606,523 and the bessemer tonnage 6,594,510.

Although the open hearth and bessemer output for 1928, at 49,853,225 tons, falls just short of attaining a 50,000,000-ton year, the addition of electric and crucible ingots readily puts 1928 across this line.

Steel Ingot Production—1927-1928

94.68 Per Cent of Industry Reporting

Gross Tons

1927	Open-hearth	Bessemer	Monthly output companies reporting	Calculated monthly output all companies	Number of working days	Approximate daily output all companies	Per cent of operation
Jan.	3,042,133	545,596	3,587,729	3,789,874	26	145,764	79.21
Feb.	3,043,492	565,226	3,608,718	3,812,046	24	158,835	86.31
March	3,702,660	590,709	4,293,369	4,535,272	27	167,978	91.28
April	3,341,750	565,440	3,907,190	4,127,335	26	158,744	86.26
May	3,273,598	557,785	3,831,378	4,047,251	26	155,663	84.59
June	2,823,107	486,053	3,309,160	3,495,609	26	134,446	73.06
July	2,596,349	436,883	3,033,232	3,204,135	25	128,165	69.65
Aug.	2,806,347	505,596	3,311,943	3,498,549	27	129,576	70.41
Sept.	2,622,977	471,548	3,094,525	3,268,881	26	125,726	68.32
Oct.	2,643,562	495,845	3,139,407	3,316,292	26	127,550	69.31
Nov.	2,478,627	481,599	2,960,226	3,127,015	26	120,270	65.36
Dec.	2,557,955	448,154	3,006,109	3,175,484	26	122,134	66.37
Total	34,932,552	6,150,434	41,082,986	43,397,743	311	139,543	75.83
1928							
Jan.	3,280,247	498,746	3,778,993	3,991,332	26	153,513	81.43
Feb.	3,308,728	521,366	3,830,094	4,045,304	25	161,812	85.84
March	3,700,411	567,309	4,267,720	4,507,520	27	166,945	88.56
April	3,509,637	564,039	4,073,676	4,302,573	25	172,103	91.29
May	3,397,631	581,949	3,979,580	4,203,190	27	155,674	82.58
June	3,016,487	527,351	3,543,838	3,742,964	26	143,960	76.37
July	3,075,247	533,550	3,608,797	3,811,573	25	152,463	80.88
Aug.	3,386,750	569,436	3,956,186	4,178,481	27	154,759	82.09
Sept.	3,381,917	545,015	3,926,932	4,147,583	25	165,903	88.01
Oct.	3,802,396	598,227	4,400,623	4,647,891	27	172,144	91.32
Nov.	3,441,985	590,796	4,032,781	4,259,380	26	163,822	86.90
Dec.	3,305,087	496,726	3,801,813	4,015,434	25	160,617	85.20
12 mos	40,606,523	6,594,510	47,201,033	49,853,225	311	160,300	85.03

Figures exclude crucible and electric ingots. Operation percentages for 1927 are based on an annual open-hearth and bessemer steel ingot capacity of 57,230,350 tons, as of Dec. 31, 1926; for 1928, on 58,627,910 gross tons as of Dec. 31, 1927.

Valley Independents Put on Open Hearths

Youngstown, O., Jan. 8.—Except for the slightly lower rate of bessemer steel production, independent operating rates would have reached 90 per cent this week. As it is, out of 51 independent open-hearth units 45 are melting this week, a gain of two over last week. Steel bar operations with the independents is 70 per cent while the Carnegie Steel Co. has advanced to 85 per cent against 75 per cent as formerly. Pipe mill schedules are heavier, with 14 units running out of a total of 20 seamless and welded units, a gain of 4 units. Tin plate mills are active at capacity with the independents as also are strip mills, while the Steel corporation subsidiary tin mills are at 85 per cent. The independents have 115 sheet units active out of 128, a gain of one from last week. The A. M. Byers Co.'s puddle mill at Girard is operating at 80 per cent.

Steel Erected Swiftly

Erecting a framework of 1100 tons of steel in five weeks, the Lackawanna Steel Construction Co., Buffalo, is believed to have established a tonnage record in building the new $1,000,000 steel bar plant of Bliss & Laughlin Inc., Harvey, Ill., in South Buffalo. Production will begin in the plant in the early spring as the result of the speedy erection of the steel frame.

Steel producers say revised freight rates would make possible more trains like this; the railroads say no

Steelmakers Guard Home Markets

Hearing Before I.C.C. on General Iron, Steel Freight Rates Develops Local Viewpoints—Bethlehem and Corporation Differ

By L. M. Lamm

WASHINGTON, Jan. 8.—Final argument in the interstate commerce commission's investigation of iron and steel rates under the Hoch-Smith resolution developed into a three-cornered fight for markets. Representatives of the iron and steel industry in the western, middle and eastern districts urged upon the commission last week the adoption of a rate scale that would permit them to reach out into other territory, while at the same time protecting their local markets from invasion by competitors. Examiners in their tentative report recommended a mileage scale basis for rates.

L. M. Walter and W. W. Collin Jr., representing the Jones & Laughlin Steel Co., Pittsburgh, contended long haul rates are too high. They explained that a state of competition has developed in the industry which makes a difference of 40, 50 and 60 cents a ton in the freight rate a big factor in marketing. They asserted manufacturers in the Pittsburgh district face new conditions as a result of the abolition of Pittsburgh-plus and that adoption of local bases is unfavorable to that district. Mr. Collin stated that finished material shipped to destinations adjacent to and west of the Mississippi river has dropped from 250,000 to 30,000 tons a year.

Proposes Rate Scale

The spokesmen for the Jones & Laughlin company proposed a scale of rates which they estimate would result in a reduction of 10 per cent in railroad revenues conditional on current volume. This reduction would apply on business moving in excess of 300 miles, which constitutes only one-third of the total, and probably would be offset by a greater volume of business under the lower rates. Mr. Collin urged that the inclusion of the Wheeling Steel Corp. and the Weirton Steel Co. within the Pittsburgh group should be maintained. He stated that there is no warrant for the suggestion made in the proposed report of Examiners Faul and Bardwell that steel mills in Ohio and West Virginia should be grouped separately.

C. S. Belsterling, representing the United States Steel Corp., declared rates from the middle district to the eastern seaboard are out of line with the rates in the East. He declared that the eastern consumers of steel made in Pittsburgh have been compelled to pay rates on which the sky is the limit, and that the Bethlehem Steel Co. is not entitled to such a high tariff wall. The Pittsburgh and Philadelphia groups were kept intact for years, but in 1906, he said, the rate from Bethlehem to New York was cut 30 cents a ton with no compensatory reduction from competitive mills.

As against a rate of 14½ cents per 100 pounds from Bethlehem to New York, Mr. Belsterling proposed that the rate from Pittsburgh to New York should be 25½ cents instead of 34 cents, the present full fifth class rate. Mr. Belsterling urged that if short haul rail rates are made too high traffic will go to the rivers. He pointed out 46 per cent of all steel used is consumed in territory east of the Ohio-Indiana line and north of the Ohio river, and that 50 per cent of the consumption in that territory is in Pennsylvania. He declared the chief interest of the Steel corporation is that rates from Pittsburgh, whether east or west, should be based on a proper relationship to the other steel producing districts.

F. L. Ballard, of the Bethlehem company, stated it has been charged 20 to 30 per cent more to get to its local markets than either Pittsburgh or Chicago to get to their local markets. Pointing out that 71 per cent of the Bethlehem company's traffic moves less than 100 miles, he asserted that the dollar of the independent does not buy as much transportation as the dollar of his Pittsburgh competitor. This condition, he said, has had a radical effect on relative development of the industry, and he predicted this proceeding will decide whether the independent will live and grow in competition with his Pittsburgh neighbor. To date he has been able to live some and grow a little, but Pittsburgh, he declared, has large natural advantages that ought not to be enhanced by preferential rates. Mr. Ballard proposed rates be constructed according to relative transportation conditions and he suggested a mileage commodity scale with a more or less constant rate of progression.

Speaks for Buffalo District

Speaking for manufacturers in the Buffalo district, Wilbur LaRoe Jr. declared establishment of the so-called Jones & Laughlin scale barred mills on the Niagara frontier from markets previously enjoyed and threatens to ruin them. He asserted they are fighting for their lives in this proceeding, because they must reach out 400 to 500 miles for their principal markets. He argued emphatically against the scale proposed in the examiners' report on the ground that it produces rates too high for long hauls. Mr. LaRoe stated that maintenance of the Johnstown-Cumberland differential as proposed in the examiners' report is a sore spot. He described it as a

direct concession to the Cambria plant of the Bethlehem company and he declared that it is not the commission's business to give a bounty to anyone.

E. E. Williamson, representing Andrews Steel Co., Newport, Ky., and other independents in Cincinnati district argued that long haul rates are too high and rate of progression too rapid in the scale proposed by examiners.

L. G. Macomber, representing the Michigan Manufacturers' association, stated his preference for a scale of rates on iron and steel articles that recognizes the theory that transportation charges decrease with distance. He argued that if Chicago and New York are to have key rates, Detroit should receive the same treatment as Detroit consumes one-thirteenth and Michigan one-ninth of the steel produced in the United States. The Michigan zone rate arbitrary requires no discussion, he said, if class rates are applied, but if commodity rates are put into effect he stated that iron and steel articles should be treated no differently from other commodities.

Wants Penalty Removed

R. L. Tuttle, Grand Rapids, Mich., stated that consumers there are in competition with the rest of Central Freight association territory, which is located more favorably with respect to both production and consumption, and that they ask therefore the same treatment that is accorded to such territory. He argued they should not be penalized by a sharp gradation of mileage inconsistent with the distance scale of the fifth class rate of progression.

R. B. Coapstick, Indiana state chamber of commerce, urged that the rate scale should be broken ahead of 110 miles at 70 miles to provide consumers with an opportunity to buy in a highly competitive market. He stated that the starting point at 6 cents is proper but that the breaks in the scale are arbitrary. He said the railroads are entitled to fair long haul rates and suggested that the rate from Pittsburgh to Chicago should be 30 cents and the rate from Pittsburgh to New York 28½ cents instead of 34 cents both ways.

A. B. Cronk, Highland Iron & Steel Co., Terre Haute, Ind., asserted the proposal to put bar rates on the basis of manufactured products would be ruinous and force that company out of business. He explained that Chicago is the big bar market and the rate on bars from Terre Haute to Chicago, where the Highland company ships 50 per cent of its outbound traffic, is 1 cents per 100 pounds, compared to 18 cents on manufactured articles. He argued bars should take a lower rate at a high carload minimum and suggested an 80,000-pound minimum.

A. H. Brown, Cleveland chamber of commerce, stated that that producing center is entitled to the same basic rates in all directions as its competitors. He declared the Johnstown-Cumberland differential is unwarranted and should not be maintained. He proposed that the new scale should start at 15 miles wtih 5 cents instead of 5 miles with 6 cents, and should be stepped up to reach a reasonable rate instead of a determined point. He objected to an increase of 20 per cent up to 450 miles and then down.

T. H. Burgess, representing iron and steel manufacturers in the Mahoning and Shenango valleys, urged that iron and steel hauled 450 miles and more should bear a proper relationship to other commodities. He said that iron and steel should have a rating less than fifth class or that the whole rate structure should be changed and all commodity rates advanced.

The examiners' report has proposed a scale of rates that is satisfactory on the whole, according to R. E. Quirk, American Rolling Mill Co., Middletown, O. He stated that the iron and steel producers in southern Ohio are on the fifth class basis and that as the proposed scale attempts to establish a uniform basis he had no intention of trying to find infirmities in it. He expressed the hope that the Ohio public utilities commission and the interstate commerce commission would consider pending complaints filed with them regardless of what it may do in this proceeding.

E. S. Ballard, representing Chicago independents, declared they are now subjected to unjust discrimination. He pointed out they are paying fifth class rates east, fifth class rates into Michigan, and fifth class rates to Detroit, Cleveland, Flint and other automobile manufacturing centers, while lower commodity rates apply in the other direction. He advocated a commodity scale, pointing out it is the diminishing ratio of less-than-carload traffic moving on a class rate basis that produces a "rainbow" scale. Mr. Ballard urged the commission to preserve a "transportation standard" for iron and steel and not establish rates made on an artificial basis. He said that an arbitrary scale would neutralize the action taken by the federal trade commission four years ago in abolishing the Pittsburgh-plus. With reference to the St. Louis group, Mr. Ballard contended that it must be left as it is or else exclude one or more lines from the business or permit fourth section departures.

Advocates Grouping Plan

Robert Hula, representing the Illinois-Indiana shippers steering committee, advocated the grouping principle which will allow more elasticity in the application of a mileage scale.

Fifth class rates from the Philadelphia district to trunk line territory are so much higher than the rates from Pittsburgh to that territory that it is obviously unfair to claim that Philadelphia enjoys undue preference, according to R. J. Baker, of the Alan Wood Iron & Steel Co. Mr. Baker asserted that the largest buyers in Philadelphia obtain 95 per cent of their requirements from middle district mills. He argued that the proposed scale would enable the Pittsburgh manufacturers to appropriate a large portion of the eastern market.

R. K. Keas, East Side Manufac-

(*Concluded on Page* 182)

Carriers Claim Rate Cuts Only Artificial Aid

RAILROADS are united in opposition to the scale of rates proposed in the examiners' report, Guernsey Orcutt, spokesman for the Central Freight association lines, informed the commission. Proposals advanced by shippers as a panacea serve little more than their own selfish interests, he said, pointing out that the scale advocated by the United States Steel Corp. would result in a reduction of $16,500,000 *a year in carrier revenues.*

Rate reductions afford no lasting benefit to shippers, according to Mr. Orcutt. He described their effect as a vicious circle in which reductions in transportation charges produce a period of artificial prosperity leading to expansion in productive capacity, in turn followed by a distressing competitive situation and a plea by shippers for relief in the form of another reduction in rates.

Mr. Orcutt claimed demand for iron and steel is determined in the long run by the law of supply and demand and consequently, he said, shippers' contention that lower rates on long hauls will produce more traffic and greater revenue for the railroads is a delusion. Under a fair freight rate, he said, a Pittsburgh manufacturer cannot continue to lay down steel in Chicago at a profit after the Chicago manufacturer learns what he is doing.

European Markets Improving

British Shipyards Accept Domestic Steel Rebate Plan—Good Orders Anticipated—Builders of Rolling Stock Obtain Large Contracts—Americans Buying Low Phosphorus Pig Iron—French Works Booked Months Ahead

European Headquarters,
IRON TRADE REVIEW,
Caxton House, Westminster, S. W.1

LONDON, Jan. 8.—(*By Cable*)—A definite improvement is noted in the situation of British shipyards. All have accepted the steel rebate plan, and British steelmakers consequently anticipate good orders. Builders of rolling stock are obtaining important contracts from Egypt, India, Ceylon and Siam. The outlook in the British structural market is bright.

Demand for British pig iron is more active, and domestic competition is keen. Pig iron exports from Middlesbrough in December advanced slightly to 9333 tons. Sales of East Coast hematite are brisker. Blast furnaces in the Barrow district have orders from France, Germany, Belgium and Italy, and some from the United States for low phosphorus iron.

The London council has awarded a substantial order for tramrails to Dorman, Long & Co., against American bidders whose prices were higher. Competition in the steel market from continental producers is light. Demand for galvanized sheets is strong. Tin plate manufacturers look forward to regular working schedules.

A report from Paris states the iron and steel outlook is favorable. Pig iron demand is active. Most steelworks are booked for several months. The tendency of prices is upward. Belgian markets are active and firm. Large domestic and export rail orders are expected to be awarded soon. Berlin reports good export demand.

British Steelmakers Merge into Larger Units

Office of IRON TRADE REVIEW,
Prince's Chambers, Corporation St.

BIRMINGHAM, Eng., Dec. 21.—On the eve of Christmas, market conditions are always adversely affected and the inventory season brings a suspension of buying. A hopeful tone prevails, however, in view of important developments among steel concerns in the north of England and the fusion of interests among rolling stock builders. During the last few years there has been a growing tendency to combine the interests of steel producers after the manner of the American corporation and this week has seen the formation of the English Steel Corp. Ltd. which takes in many companies now owned by Vickers, Vickers, Armstrong and Commell Laird. Allied with this concern a new company is formed, namely the Metropolitan Cammell Carriage Wagon & Finance Co. Ltd., which covers a number of steelmaking and wagon building firms.

Sterling $4.85

The amalgamation of Dorman Long and Bolckow Vaughan brings together two of the largest firms in the Middlesbrough district and a third combine unites the Cargo Fleet Iron Co. and the South Durham Steel & Iron Co., also important concerns.

The London county council has been in the market with contracts for tramrails, and Dorman Long & Co.'s tender was accepted at £55,381. The Frodingham Iron & Steel Co. Ltd., Lincolnshire, has taken a contract for conductor rails amounting to £10,464. Leeds Forge Co. Ltd. has an or-

Current Iron and Steel Prices of Europe

Dollars at Rates of Exchange, Jan. 7

Export Prices f. o. b. Ship at Port of Dispatch—By Cable

	British Gross Tons U. K. Ports	£ s d	*French* Metric Tons Channel Ports	£ s d	*Belgium and Luxemburg* Metric Tons Channel Ports	£ s d	*German* Metric Tons Rotterdam or North Sea Port	£ s d
PIG IRON								
Foundry No. 3, Silicon 2.50-3.00	$16.01	3 6 0*	$15.64	3 4 6	$15.64	3 4 6	$15.76	3 5 0
Basic	15.76	3 5 0	15.76	3 5 0	15.76	3 5 0	15.28	3 3 0
Basic-bessemer	16.98	3 10 0†	15.76	3 5 0	15.76	3 5 0	14.55	3 0 0
Hematite, Phosphorus 0.02-0.05	17.22	3 11 0	22.48	575*	.....	.....	16.98	3 10 0
SEMIFINISHED STEEL								
Billets	$30.31	6 5 0	$24.49	5 1 0	$24.49	5 1 0	$24.25	5 0 0
Wire rods	.....	8 12 6	29.71	6 2 6	29.71	6 2 6	29.71	6 2 6
FINISHED STEEL								
Standard rails	$41.83	7 15 0	$31.53	6 10 0	$31.53	6 10 0	$31.53	6 10 0
Merchant bars	1.68c	7 15 0	1.33c	6 0 6	1.33c	6 0 6	1.38c	6 5 0
Structural shapes	1.60c	7 7 6	1.10c	5 0 0	1.10c	5 0 0	1.16c	5 5 0
Plates, ship, bridge and tank	1.76c	8 2 6	1.38c	6 5 0	1.38c	6 5 0	1.41c	6 8 0
Sheets, black, 24 gage	2.17c	10 0 0	2.24c	10 3 9	2.24c	10 3 9	2.48c	11 5 0
Sheets, galvanized, 24 gage, corrugated	2.93c	13 10 0	2.26c	10 5 0	2.26c	10 5 0	3.41c	15 10 0
Bands and strips	2.17c	10 0 0	1.38c	6 5 0	1.38c	6 5 0	1.49c	6 15 0
Plain wire, base	2.12c	9 15 0	1.71c	7 15 0	1.71c	7 15 0	1.71c	7 15 0
Galvanized wire, base	2.93c	13 10 0	2.13c	9 14 0	2.13c	9 14 0	2.15c	9 15 0
Wire nails, base	2.40c	11 0 0	1.79c	8 2 6	1.79c	8 2 6	1.76c	8 0 0
Tin plate, base box 108 pounds	$ 4.37	0 18 0	.....	.....	.....	.....	$ 6.79	1 8 0

*Francs

Domestic Prices at Works or Furnace—Last Reported

			Francs			Francs		Marks
Foundry No. 3 Pig Iron, Silicon 2.50—3.00	$16.00	3 6 0	$17.60	450(2)	$ 15.68	600	$18.56	78
Basic pig iron	15.76	3 5 0	18.96	485(1)	16.32	605	20.94	88
Furnace coke	3.52	0 14 6	5.87	150	5.14	185	5.12	21.50
Billets	30.31	6 5 0	23.07	590	24.33	875	28.80	121
Standard rails	1.79c	8 5 0	1.46c	810	1.63c	1,250	1.51c	140
Merchant bars	1.68c	7 15 0	1.33c	740	1.41c	1,085	1.52c	141
Shapes	1.71c	7 17 6	1.22c	675	1.24c	950	1.49c	138
Plates, ship, bridge and tank	1.87c	8 12 6	1.54c	855	1.46c	1,125	1.71c	158
Sheets, black, 24 gage	2.28c	10 10 0	2.92c	1,620	2.34c	1,800	2.43c	225
Sheets, galvanized 24 gage, corrugated	2.96c	13 12 6	3.69c	2,050	3.87c	2,975	3.78c	350
Plain wire	2.12c	9 15 0	1.94c	1,075	1.30c	1,000	2.48c	230
Bands and Strips	2.17c	10 0 0	1.53c	850	1.72c	1,325	1.77c	164

*Middlesbrough; †Scotch foundry iron; ‡delivered; (1) Basic-bessemer; (2) Longwy. British export furnace coke £0 14s 6d ($3.52) f. o. b Ferromanganese £21 13s 0d ($105.00) delivered Atlantic seaboard, duty-paid. German ferromanganese £15 0s 0d ($72.90) f. o. b.

The equivalent prices in American currency are in dollars per ton for pig iron, coke, semi-finished steel and rails; finished steel is quoted in cents per pound and tin plate in dollars per box. British quotations are for basic open-hearth steel; French, Belgian, Luxemburg, and German are for basic-bessemer steel.

der for 600 steel wagons for the South African railways. It is well known that all the contracts with the Colonies are eagerly sought after by Continental builders and one of the aims of the fusion of interests is to be able to meet this competition more effectively. The home railways have bought so little material lately that most of the work now being carried out at Birmingham carriage building yards is intended for the colonies and South America.

In the pig iron industry conditions vary a good deal. Improvement is noted in the northeast and northwestern markets but smelters in the Midland district are finding it difficult to dispose of their iron. On the Birmingham market yesterday pig iron consumers were sounding the market as to prices. They are aware that stocks will accumulate somewhat even through a brief holiday and in the hope of a sagging market in the new year the placing of contracts was avoided. Smelters, on the other hand, are holding their ground, and Derbyshire cannot be bought below £2 19s ($14.29) and £2 15s 6d ($13.45) is the lowest for Northamptonshire. The northeast coast is something of an anomaly as regards hematite. The Consett Iron Co. find it necessary to put out their furnace on hematite, but Gjer Mills & Co. intend to start two furnaces in the new year. Stocks have been cleared and the home and Continental requirements absorb production, so that makers take a firm stand at £3 11s ($17.21) for ordinary qualities. The foundry iron trade of Middlesbrough is not so active and experiences some competition from Midland brands both in the northeast district and in Scotland.

Buying of Continental material continues to reduce, but prices received on the Birmingham exchange are more attractive than for weeks past. Billets are quoted at £5 17s 6d ($28.96), whereas English steel can be bought at £6 5s ($30.31). Belgian No. 3 iron is easier at £7 2s 6d ($34.55), delivered, but Birmingham merchants find it difficult to sell Continental material now.

French Steel Prices Showing Upward Tendency

PARIS, Dec. 21.—(*European Staff Service*)—The situation of the French iron and steel industry continues fair, but it is less satisfactory than at the beginning of the winter, as new business is falling off in both the domestic and export markets. This may be due to the time of year, as there usually is a decline before the beginning of the new year. A noticeable increase in the cost of living is being registered and is causing uneasiness in case it might bring about demands for increases in wages, especially as there is a shortage of labor in France. The tonnage of exports is declining and the trade balance is more and more on the debit side.

Certain signs indicate a possible tendency for iron and steel prices to harden. A rise has been registered in the price of German metallurgical coke, and it is possible the comptoirs may increase their base prices, which would result in an increase of costs for the transforming industries. For the time being, however, it does not look as if the coal mines in the north of France intend to raise quotations. Representatives of the various member-

Franc—3.91c

countries of the steel entente met Dec. 13. The French representatives had suggested that the base tonnage quota for the first quarter of 1929 should be increased by 1,000,000 tons, but this suggestion has been refused and the quota remains fixed on the annual basis of 29,287,000 metric tons. The German delegates had put forward a request that they should receive compensation for the considerable decrease in production tonnage that resulted from the Ruhr stoppage during the last quarter of the year. It was decided that this question should be discussed at a subsequent meeting. The French wire rod syndicate met Dec. 19, and no changes were made in the price, which remains 850 francs ($33.35), Thionville parity. During the meeting it was reported that order books were satisfactory and that the position of wire product manufacturers had considerably improved.

The comptoir of A-products for semifinished steel and structural steel also met, and although a number of producers suggested an increase in the price of semifinshed products, it was finally decided to make no changes, but the price of beams has been increased from 675 to 700 francs ($26.45 to $27.40). There were certain objections to this course of action, but they were over-ridden, and a certain amount of surprise is expressed in the trade, owing to the fact that that particular department is not extremely active.

There have been some fluctuations in the price of merchant bars, and while makers' quotations range from 740 to 760 francs ($58.95 to $59.30), some concessions are made. Negotiations for organization of a plate and sheet comptoir are progressing, and it is believed this syndicate will be formed at the beginning of 1929. Plates are quoted at 780 to 810 francs ($30.50 to $31.50). Medium-sized sheets are about 870 francs ($34), and the finer sizes range from 1120 francs ($43.60), upward. Prices of wire products tend to rise. Black wire is 1050 francs ($41) and wire nails are 1150 francs ($45).

Labor Situation Hurts German Steel Market

BERLIN, Dec. 21.—(*European Staff Service*)—The situation of the German iron and steel industries improved immediately after the lockout of the Ruhr had terminated. The United Steel Works Corp. stated that all its workers again were busy ten days after the works had started. There are expectations that production in December will show a substantial increase over November, although it cannot be expected that it will reach the level of the earlier months. Output of pig iron in November showed a decrease of about 74 per cent compared with October, and it is expected production of raw steel and rolled products will fall off proportionately. The market is unsettled.

The volume of unfilled orders on books of the United Steel Works Corp., which on Oct. 1 had decreased to 68.1 per cent of the figure prevailing one year previously, reached 77.5 per cent Dec. 1. This, however, is due to the fact that during the stoppage shipments did not keep pace with new orders coming in, and it is expected that the volume of unfilled orders soon will again decrease. Until the effect of the arbitration becomes known, the associations are not too anxious to book new orders for future delivery, while consumers are not eager to buy, as they do not wish to overload their stocks when the stocktaking period is approaching. These conditions are inducing producers to direct their attention to the export markets, especially as the present world level of prices leaves them a fair profit. It is noted that during the past financial year the United Steel Works Corp. exported 44 per cent of its output, as against 42 per cent and 39 per cent in the two preceding years.

Peter Kloeckner, president of the Kloeckner Works Co., in giving out his report at the annual meeting of the stockholders of the company gave a rather pessimistic impression of the results of rationalization. He pointed out that the favorable results obtained to date have been paralyzed, owing to the increases in wages and the shortening of working hours. He stated that further rationalization by technical improvements has reached its limit, and that now further progress can only be made by additional work. It is felt, however, that these statements were made more particularly for the benefit of German observers. Undoubtedly, if rationalization had not been resorted to, the effect of higher wages and shorter hours would have been still more detrimental.

The annual reports of the Hoesch Iron Works and the Koln-Neuessen Mining Co. were not as favorable as for the previous financial year, and dividends were reduced from 8 to 6½ per cent for the Hoesch concern and from 9 to 7 per cent for the Koln-Neuessen Mining Co.

Current Statistics of Industry

Malleable Castings Low

Washington, Jan. 8.—Malleable castings output in November was 6000 tons lower than in October, according to figures furnished by the department of commerce. Following are comparisons by months:

	Total tons produced	Per cent of capacity	Total tons booked	†Monthly capacity
1926	715,384	54.7	607,949	1,307,889
1927				
November	40,845	40.5	34,624	100,778
11 mos.	583,512	50.5	514,943	1,153,164
December	47,876	47.6	49,215	100,685
Year	631,388	50.4	564,158	1,253,849
1928				
January	54,818	59.6	53,153	92,015
February	59,045	63.8	55,452	92,498
March	63,322	69.6	60,697	91,043
April	56,880	62.5	53,099	91,019
May	61,458	67.3	54,429	91,296
June	60,779	66.6	51,388	91,259
July	54,373	59.9	52,128	90,759
August	61,833	68.5	56,415	90,311
September	56,650	63.2	55,278	89,696
October	63,274	69.8	55,909	90,713
November	57,106	63.3	50,273	90,276
11 mos.	649,538	64.9	598,221	1,000,885

†Capacity during 1927 has been based on following formula: "Total number of units of molding floor space times average production per molder per day per unit of floor space, times number of actual working days per month." Beginning January, 1928: "Average monthly production for the best six consecutive months since Jan. 1, 1919, is to be taken as a practical monthly capacity."

Babbitt Metal Slumps

Washington, Jan. 8.—Total apparent consumption of babbitt metal in November declined slightly from October, according to the report of the department of commerce. Monthly comparisons follow:

	Total apparent consumption	Sold by manufacturers	Consumption by producers
	(Figures given in pounds)		
1927			
November	4,505,954	3,320,205	1,185,749
Tot. (11 mos.)	55,646,056	43,834,466	11,811,590
December	4,465,787	3,169,493	1,296,294
Total, 1927	60,111,843	47,003,959	13,107,884
1928			
January	4,928,517	4,034,352	894,165
February	4,470,368	3,443,694	1,026,674
March	4,927,634	3,903,071	1,024,563
April	4,842,656	3,724,691	1,117,965
May	4,606,899	3,578,422	1,028,477
June	4,731,023	3,625,347	1,105,676
July	4,692,825	3,816,707	938,955
August	4,755,662	3,843,680	911,982
September	5,308,403	4,309,004	999,399
October	5,796,419	4,605,179	1,191,240
November	5,659,937	4,386,190	1,273,747
Tot. (11 mos.)	54,720,343	43,219,544	11,500,799

Barrel Output is Off

Washington, Jan. 8.—Steel barrel output declined in November, department of commerce statistics show. Members of the Steel Barrel Manufacturers association, Cleveland, report October shipments of 349,237 barrels, with unfilled orders of 418,584. Production of I. C. C. barrels was at 43.7 per cent, light barrels at 57.5 per cent and all barrels at 53.1 per cent. Monthly comparisons follow:

1927	Production	Shipments	Unfilled orders for delivery within 30 days	Unfilled orders for delivery beyond 30 days
Nov.	500,909	497,345	182,065	633,724
Total (11 mos.)	6,186,342	6,170,115	.....	.....
Dec.	444,227	454,638	221,897	1,086,468
1928				
Jan.	475,906	474,159	241,145	1,110,652
Feb.	518,944	514,362	297,889	1,119,738
Mar.	636,855	644,521	304,043	1,039,540
Apr.	667,827	661,949	357,131	919,863
May	696,281	694,843	324,549	932,568
June	712,779	717,496	319,443	840,313
July	647,844	645,881	341,346	891,066
Aug.	677,313	675,600	319,495	744,863
Sept.	593,255	595,640	292,686	704,134
Oct.	656,021	661,009	301,782	522,090
Nov.	563,647	568,353	319,699	631,798
Total (11 mos.)	6,846,672	6,853,813	.....	.....

Pails, Tubs Output Off

Washington, Jan. 8.—Production of galvanized sheet metalware in November declined noticeably, according to statistics furnished by the department of commerce. Monthly comparisons follow:

	PAILS, (In dozens)		TUBS,		OTHER WARE	
	Production	Shipments	Production	Shipments		
Nov.	112,690	110,275	35,602	28,578		
11 mos.	1,575,452	1,597,908	402,990	404,148		
Dec.	93,273	90,254	22,090	17,013		
1927	1,668,725	1,688,162	425,080	421,161		
1928						
Jan.	125,536	149,304	32,678	35,689		
Feb.	165,757	162,153	28,513	26,334		
March	173,592	175,472	50,904	45,205		
April	208,544	201,119	31,545	36,452		
May	177,170	155,561	39,206	35,143		
June	141,448	144,385	48,038	44,833		
July	114,343	121,415	61,688	47,856		
Aug.	127,797	142,487	37,846	44,377		
Sept.	150,845	139,183	55,850	50,606		
Oct.	153,813	152,258	56,469	54,596		
Nov.	131,792	103,290	33,553	34,012		
11mos.	1,682,682	1,660,599	479,386	457,954		

Enameled Ware Is Low

Washington, Jan. 8.—Shipments of enameled sanitary ware in November made a sharp decline, totalling 322,875 dozens, compared with 417,387 dozens in October, according to statistics furnished by the department of commerce. Following are further monthly comparisons:

	In dozens			
1927	Total	White	Gray	Colored
November	287,115	153,283	106,104	27,728
11 mos.	3,609,650	1,909,446	1,477,323	222,881
December	307,280	161,922	119,885	25,473
Tot., 1927	3,916,930	2,071,368	1,597,208	248,354
1928				
January	319,871	155,172	132,136	32,563
February	372,848	179,794	131,485	61,569
March	442,689	200,010	152,895	89,784
April	351,034	143,470	123,808	83,756
May	348,661	158,458	116,541	73,662
June	299,078	141,486	95,959	61,633
July	277,684	125,653	108,584	43,447
August	358,811	164,580	134,191	60,040
September	352,484	172,127	130,337	50,020
October	417,387	190,424	166,078	60,885
November	322,875	139,197	123,850	65,828
11 mos.	3,869,422	1,770,371	1,415,864	683,187

Plate Orders Make Gain

Washington, Jan. 8.—New orders for fabricated steel plate in November gained somewhat over October, according to department of commerce statistics. Monthly comparisons follow:

1927	*Total	Oil storage tanks	Gas holders	Blast furnaces	Stacks and miscellaneous
Nov.	27,341	8,920	978	422	10,794
11 mos.	462,049	197,607	35,722	6,539	158,230
Dec.	35,648	13,367	3,490	385	13,088
(Year)	497,697	210,974	39,212	6,924	171,318
1928					
Jan.	35,787	8,758	2,062	1,225	16,412
Feb.	49,820	25,532	3,679	143	15,420
March	46,840	25,226	1,897	699	14,683
April	50,347	22,095	4,654	619	16,265
May	42,376	14,849	4,636	202	17,768
June	35,202	12,204	3,225	778	15,803
July	35,959	16,881	1,848	499	12,159
Aug.	47,245	24,807	1,814	429	17,579
Sept.	40,281	18,572	1,642	386	13,976
Oct	*53,983	23,960	1,861	2,435	*17,480
Nov.	54,282	32,381	2,081	563	10,736
11 mos.	492,122	227,608	29,399	7,978	169,281

*Revised.

Locomotives Increase

Washington, Jan. 8.—Shipments of railroad locomotives in December increased over November but the total for 1928 was a little over half as large as 1927, figures supplied by the department of commerce show. Further monthly comparisons follow:

Year and Month	Shipments Total	Shipments Domestic Steam	Shipments Domestic Electric	Unfilled orders Total	Unfilled orders Domestic Steam	Unfilled orders Domestic Electric
1927						
Dec.	72	41	13	232	178	39
1927	1,074	726	148	.....	.....	.....
1928						
Jan.	47	22	23	222	161	38
Feb.	59	43	11	204	146	40
March	70	44	15	178	123	37
April	46	38	6	188	129	41
May	41	29	10	220	138	39
June	51	39	11	201	109	37
July	46	19	5	198	98	59
Aug.	34	23	4	204	135	26
Sept.	41	28	2	178	118	27
Nov.	35	20	1	152	104	31
Dec.	44	36	4	282	238	27
(1928)	550	367	92	.....	.....	.....

St. Louis Steel Castings Co., St. Louis, has completed improvements at its plant practically doubling capacity. New equipment installed includes an additional large type electric furnace.

1928 Pig Iron Total Is Sixth Best

REVISED and complete statistics on coke pig iron production in December, as compiled by IRON TRADE REVIEW, place the month's total at 3,369,784 gross tons, making the 1928 output 37,831,741 tons. If the war years, 1916, 1917 and 1918, be taken into consideration, then 1928 is the sixth best year in history, but on the basis of peacetime production, 1928 is third only to the record 40,025,850 tons of 1923 and the 39,100,941 tons of 1926.

MONTHLY PRODUCTION

	1928	1927	1926	1925
Jan.	2,855,515	3,101,346	3,319,789	3,372,207
Feb.	2,898,668	2,940,604	2,923,850	3,214,067
Mar	3,199,175	3,482,107	3,458,171	3,571,422
April	3,181,975	3,424,377	3,438,805	3,211,235
May	3,292,790	3,391,067	3,477,820	2,933,907
June	3,082,340	3,089,726	3,232,478	2,679,045
July	3,072,711	2,954,625	3,224,663	2,665,262
Aug.	3,136,995	2,950,674	3,200,723	2,707,171
Sept.	3,063,593	2,782,500	3,163,269	2,725,885
Oct.	3,373,539	2,812,015	3,334,206	3,017,889
Nov.	3,304,656	2,661,863	3,237,992	3,023,257
Dec.	3,369,784	2,698,208	3,089,175	3,249,057
Total	37,831,741	36,289,112	39,100,941	36,370,404

The revised daily rate for December is 108,702 tons, compared with 110,155 tons in November and 87,039 tons in December, 1927. Only once before has the December rate been so high, and that was the 110,778 tons of December, 1918. The highest January rate in all history is the 108,781 tons of January, 1925, and considering that three more blast furnace stacks were active on Dec. 31 than on Nov. 30, an increase rate for January is forecast and a monthly record is possible.

Rate of Operation

(Relation of Production to Capacity)

	1928†	1927*
Dec.	80.2	61.8
Nov.	81.1	63.0
Oct.	79.3	64.5
Sept.	75.2	65.9
Aug.	74.4	67.6
July	73.2	67.7
June	76.0	73.2

***Based on coke pig iron capacity of 51,379,400 gross tons as of Dec. 31, 1926. †Based on capacity of 49,605,720 tons as of Dec. 31, 1927. Capacities computed by American Iron and Steel institute.**

AVERAGE DAILY PRODUCTION

	1928	1927	1926	1925	1924
Jan.	92,113	100,043	107,039	108,781	97,273
Feb.	99,954	105,021	104,423	114,788	105,987
Mar.	103,199	112,326	111,554	115,207	111,787
Apr.	106,066	114,146	114,627	107,041	107,537
May	106,219	109,388	112,187	94,642	84,515
June	102,745	102,991	107,749	89,301	67,427
July	99,120	95,311	104,021	85,976	57,531
Aug.	101,193	95,183	103,249	87,328	60,741
Sept.	102,120	92,750	105,442	90,862	68,454
Oct.	108,824	90,710	107,555	97,351	79,419
Nov.	110,155	88,728	107,933	100,775	83,832
Dec.	108,702	87,039	99,651	104,808	95,367
Ave.	103,365	99,422	107,126	99,645	84,908

DIVISIONS OF PRODUCTION

1927	Merchant	Non-merchant	Spiegel and ferro-manganese
Jan.	745,766	2,355,580	40,330
Feb.	642,804	2,297,800	31,605
March	762,354	2,719,753	35,483
April	735,385	2,688,992	37,657
May	701,582	2,689,485	38,531
June	714,268	2,375,458	39,764
July	736,707	2,217,918	35,768
Aug.	667,104	2,283,570	30,383
Sept.	651,246	2,131,254	26,712
Oct.	688,880	2,123,135	24,763
Nov.	652,237	2,009,626	24,372
Dec.	660,616	2,037,592	27,809
Total	8,358,949	27,930,163	393,177
1928			
Jan.	649,654	2,205,861	32,510
Feb.	579,298	2,319,370	27,376
March	597,106	2,602,069	34,587
April	586,045	2,595,930	33,599
May	596,664	2,696,126	38,466
June	589,127	2,493,213	38,628
July	584,611	2,488,100	42,230
Aug.	563,510	2,573,485	33,585
Sept	580,344	2,483,249	31,170
Oct.	643,043	2,730,496	33,519
Nov.	632,869	2,671,787	38,811
Dec.	686,431	2,683,353	34,541

DECEMBER PIG IRON PRODUCTION

	No. in blast last day of month Dec.	Nov.	—Total tonnage made— Merchant	Nonmerchant	—Totals— Dec.	Nov.
Ohio	45	43	123,882	669,154	793,036	759,026
Pennsylvania	68	68	145,440	982,528	1,127,968	1,150,672
Alabama	19	19	110,765	135,813	246,578	229,055
New York	12	12	85,609	101,060	186,669	194,161
Illinois	17	16	133,272	199,332	332,604	316,776
Colorado	3	3				
Indiana	14	13				
Maryland	4	5	16,232	422,683	438,915	416,080
Virginia	1	1				
Wisconsin	0	0				
Kentucky	2	2				
Massachusetts	1	1				
Tennessee	1	1	26,260	90,397	116,657	114,158
Utah	1	1				
West Virginia	3	3				
Michigan	4	4				
Minnesota	2	2				
Missouri	0	0	36,136	56,680	92,816	85,917
New Jersey	0	0				
Texas	0	0				
Spiegel and ferro—all states	....	....	8,835	25,706	34,541	38,811
Total	197	194	686,431	2,683,353	3,369,784	3,304,656

December's production of 3,369,784 tons is broken up into 686,431 tons of merchant iron, 2,683,353 tons of nonmerchant iron and 34,541 tons of spiegeleisen and ferromanganese. This is a slight gain for both merchant and nonmerchant iron over November—there being one more working day in December—but a slight loss for the alloys.

As stated in the preliminary report in the Jan. 3 issue, at the close of December 197 stacks were active, compared with 194 the month previous. The gain was entirely on the side of merchant stacks, as the five steelworks stacks lighted were balanced by five blown out. During the month two stacks were officially abandoned or sold for dismantling, leaving 335 stacks as potential producers. The two stacks dropped are Fannie, of the M. A. Hanna Co., Cleveland, at West Middlesex, Pa., and the No. 8 stack, formerly the Philadelphia, of the Sloss-Sheffield Steel & Iron Co. at Florence, Ala. The capacity of the former stack was 135,000 tons annually and of the latter 80,000 tons.

Industrial Men in the Day's News

Fred W. Waterman, New President, National Tube Co.

FROM 1904 to 1928 was the period required in his march upward from the position of chief engineer of one of the largest pipe producers in the world to that of its chief executive.

WHEN doing drafting and engineering work for iron and steel companies he little thought he was equipping himself for large mill construction work at Gary, Ind., and McKeesport, Pa.

WAR time requirements of the government for an ordnance plant on Neville island, near Pittsburgh, presented him with his initial construction opportunity of major proportions.

IN THE relatively short span of less than a quarter century Fred W. Waterman has climbed the ladder of success, round by round, from the position of chief engineer of one of its plants to the highest berth available in one of the largest companies of its kind in the world. His appointment as president of the National Tube Co., Pittsburgh, pipe subsidiary of the United States Steel Corp., to succeed Taylor Allderdice, who retired Jan. 1, was announced briefly in IRON TRADE REVIEW, issue of Jan. 3.

Mr. Waterman in 1904 became chief engineer of the Lorain, O., works of the National Tube Co., a position he held for 12 years. In a way the World war presented to him his great opportunity, for when the Steel corporation was requested by the government to build an ordnance plant on Neville island, near Pittsburgh, he was placed in charge of construction. There he demonstrated his ability to conduct large enterprises. Then when the work was discontinued subsequently to the signing of the armistice, Mr. Waterman was sent to Gary, Ind., where in 1923 he was appointed chief engineer in charge of the construction of the large tube plant of the Gary Tube Co., subsidiary of the National Tube Co. He later became manager of the plant and that position he has since held.

Incidentally, one of the first major projects to come under his jurisdiction as the company's executive head will be the expansion program at the McKeesport, Pa., plant, largely for the production of seamless tubing. Plans for the new mills have been reported under consideration for some time but have not been officially approved.

Mr. Waterman, who was born at Sycamore, Ill., May 24, 1869, was graduated in 1890 from the University of Illinois, with a degree of bachelor of science in mechanical engineering. His initial post was with the Iron Bay Mfg. Co., Duluth. He later was employed by the Pullman Co., Chicago, now the Pullman Car & Mfg. Corp. His next connection was with the Chicago & North Western railroad, in its drafting and engineering department. Prior to becoming identified in 1904 with the company which he now heads, he was affiliated with the Illinois Steel Co., another Steel corporation subsidiary, as master mechanic at its Joliet, Ill., plant.

His record of accomplishment makes Mr. Waterman a worthy successor to such men as Taylor Allderdice and W. B. Schiller, his immediate predecessors in office. These men as chief executives for the Tube company have established a high mark for him to follow.

Entirely characteristic of Mr. Waterman is his rejoinder to the question whether he has any outside interests. Said he: "I am not connected with nor interested in any business activities other than those pertaining to my position with the United States Steel Corp."

Men of the Industry

W. B. GILLIES, who has been district manager at Chicago for the Youngstown Sheet & Tube Co., Youngstown, O., has been appointed assistant to Vice President W. C. Reilly, whose offices have been transferred from the mills at Campbell, O., to the Stambaugh building, Youngstown, where Mr. Gillies also will be located.

Mr. Gillies became identified with the Youngstown Sheet & Tube Co. when it took over the Steel & Tube Co. of America four years ago. Mr. Reilly has had no assistant since E. T. McCleary became president of the Republic Iron & Steel Co.

* * *

L. Weimer Murray, district sales manager of the General Refractories Co., Chicago, has left for Bermuda and the West Indies.

* * *

Frank C. Wright, member of Lee, Higgins & Co., New York, investment brokers, was recently elected a director of Newton Steel Co., Newton Falls, O.

* * *

R. W. Ruddon has been appointed first vice president and general manager of the Federal Motor Truck Co., Detroit. He has been connected with the company for the past 15 years.

* * *

O. M. Butler resigned as manager of the Detroit office of the bureau of foreign and domestic commerce, Jan. 1. He has been appointed assistant to the president of the Clark Tructractor Co., Battle Creek, Mich.

* * *

C. J. Butler, for years superintendent for the Sharon Foundry Co., Wheatland Pa,, has gone with the United Engineering & Foundry Co., at Pittsburgh in charge of the sale of miscellaneous steel castings.

* * *

Judd W. Spray has been appointed vice president and general sales manager of the Timken Roller Bearing Co., Canton, O. He has been general sales manager of the company since 1926 and prior to that he had been sales manager of the automotive division of the company in Detroit for several years.

* * *

W. M. Jensen has been made Pacific coast manager of Pittsburgh Steel Co., Pittsburgh, with headquarters at 351 Bryant street, San Francisco. For many years Mr. Jensen has been associated with the late A. C. Rulofson, who represented the interests of Pittsburgh Steel Co. on the Pacific coast.

* * *

R. S. Shoemaker, superintendent of the maintenance department, Middletown, O., division of the American Rolling Mill Co., was recently appointed superintendent of the blooming and bar mill department of the Middletown works. Mr. Shoemaker is

EDWARD S. KNISELY

Until recently vice president and head of the general sales department of the Bethlehem Steel Co., but who on Jan. 1 severed his connection with that interest, as noted in IRON TRADE REVIEW of Jan. 3

past president of the Association of Iron and Steel Electrical Engineers.

* * *

Leroy P. Robinson, for 12 years New England representative of the Werner G. Smith Co., Cleveland, and the Sterling Wheelbarrow Co., Milwaukee, has assumed his new duties as director of core oil sales of the former firm.

Mr. Robinson has been succeeded by Ray Hunter, who for many years has been New England representative of Wm. White & Bro., Philadelphia.

* * *

William Bager, vice president in charge of engineering and manufacturing for the Bucyrus-Erie Co., South Milwaukee, Wis., and Erie, Pa., was likewise placed in charge of domestic sales, when the Erie, Pa., sales office was transferred Jan. 1 to the main office and works at South Milwaukee. J. G. Miller, formerly assistant to the senior vice president, will be manager of domestic sales under Mr. Bager. Four assistant sales managers have been named as follows: P. H. Birckhead, in charge of sales of large units; J. A. Garber, in charge of small units; M. F. Keese, commercial engineer in charge of dredges, and M. J. Woodhull, district manager of the central sales office. The accounting division of the Erie works also has been transferred to South Milwaukee.

* * *

Arthur G. Brown, for the past several years Pacific coast sales manager for the Republic Iron & Steel Co., Youngstown, O., with headquarters in the Rialto building, San Francisco, has resigned and is now connected with the sales organization of the United States Steel Products Co., Russ building, San Francisco.

George F. Emanuels succeeds Mr Brown as Pacific coast sales manager for the Republic company. Mr. Emanuels was for many years connected with the Pacific Hardware & Steel Co., San Francisco, now known as Baker, Hamilton & Pacific Co. For the past seven years he has been in the importing and exporting business.

* * *

Edwin H. Peirce has resigned as vice president and general manager of the Niles Tool Works Co., Hamilton, O. This is coincident with the merger of the Niles Tool Works Co., the Hooven, Owens, Rentschler Co., and the Hamilton Press Co., all of Hamilton, O., to form the General Machinery Corp. Mr. Pierce remains a director of the Niles Tool Works Co.

Prior to his affiliation with the Niles Tool Works Co., Mr. Peirce was identified with the United States Steel Corp. for 19 years, as superintendent of the New Haven, Conn., works and the South works at Worcester, Mass., of the American Steel & Wire.

* * *

H. J. Stein recently resigned his position with the Ornamental Brass Shops, Rockford, Ill., to become affiliated with the Allis-Chalmers Mfg. Co., West Allis, Wis.

* * *

Elmer B. Jones, who resigned recently after a 20-year connection with the Erie railroad, was appointed assistant traffic manager of the Norton Co., Worcester, Mass., effective Jan. 2.

He will assist Benjamin F. Curtis. Prior to going with the Erie, Mr. Jones was affiliated with the Boston & Maine railroad.

* * *

Maurice H. Bent, of Eastman, Dillon & Co., Philadelphia, has been elected a director of the Sheffield Steel Corp., Kansas City, Mo.

* * *

Fred C. Sanborn was recently elected to the board of directors of the Belding Foundry Co., Belding, Mich, to fill the vacancy caused by the recent death of R. Howard Hall.

* * *

C. A. Dutton, formerly with the Carborundum Co., Niagara Falls, N. Y., has become associated with the furnace department of the Ferro Enamel Supply Co., Cleveland.

* * *

F. Martin Buckingham, affiliated for some time with the Wallace Barnes Co., Bristol, Conn., has been transferred to Hamilton, Ont., to become general manager of the Wallace Barnes Co. Ltd.

* * *

R. I. Schonitzer, formerly consulting engineer in the Toledo, O., and Detroit plants of the Truscon Steel Co., Youngstown, O., has been appointed chief engineer of the company's plant in Cleveland.

* * *

Frank L. Estep, member of the firm of Perin & Marshall, New York, returned to New York, Jan. 4, after spending nearly a year abroad. During that time Mr. Estep visited Russia, Germany, France, Norway, Sweden and Spain.

* * *

N. W. Warren has been appointed vice president and general manager of the Dominion Bridge Co. Ltd., Montreal. Other recent appointments by President G. H. Duggan are: L. R. Wilson, vice president in charge of operations, and W. T. Bailey, vice president in charge of sales.

* * *

Arch V. Ritts has been appointed chief enginener of the Costello Engineering Co., Pittsburgh. Mr. Ritts, is a graduate of the Carnegie Institute of Technology, has been associated with the Costello company as assistant chief engineer since its inception. Prior to his connection with the Costello company he was with Tate, Jones & Co., Leetsdale, Pa.

* * *

H. L. Stevens has been elected president of the Danville Structural Steel Co., Danville, Pa. Mr. Stevens had been with A. Johnson & Co., New York, for several years. Prior to that he had been general manager of sales for the Central Iron & Steel Co., Harrisburg, Pa., and originally represented the Lackawanna Steel Co. in the New England territory.

* * *

Dr. Irving Langmuir, assistant director of the research laboratory of the General Electric Co., Schenectady, N. Y., has been elected president of the American Chemical society for 1929. He was chosen by a national mail ballot of the society's 17,000 members and succeeds Prof. Samuel W. Parr of the University of Illinois.

Dr. Langmuir was born in Brooklyn, N. Y., in 1881 and when only seven began to study chemistry.

* * *

George F. Williams has resigned as vice president, sales manager and director of the Moore Drop Forging Co., Springfield, Mass. Harold G. Dickey, of West Springfield, Mass., was elected a director of the company at the recent annual meeting of stockholders and other directors re-elected were: President Alfred H. Chapin and Frank D. Fuller, Springfield; Earl C. Abbe and Frank S. Hatch, Longmeadow, Mass.; John M. Collins, West Springfield; Benedict J. Baker, Boston; Edwin A. Fish and Walter Robbins, New York. Mr. Chapin was re-elected treasurer; Mr. Fuller general manager and Mr. Hatch assistant treasurer and secretary.

* * *

Frank A. Ketcham, who started in 1900 as a stock room apprentice was on Jan. 1, elected president of the employe-owned Graybar Electric Co., New York. He succeeds Albert L. Salt, who was elected chairman of the board. Walter J. Drury of New York and Walter P. Hoagland, of Chicago, eastern and central district manager, respectively, were elected directors. Other officers are: George E. Cullinan and Leo M. Dunn, vice presidents; Elmer W. Shephard, treasurer and Louis Fille, secretary.

Mr. Ketcham, who entered the company's employ in Chicago in 1900, was made executive vice president in 1926 when the Graybar company took its own name; it formerly had been known as the supply department of the Western Electric Co.

* * *

H. L. R. Emmett, who has been with the General Electric Co., Schenectady, N. Y., since 1912 and who in 1922 was made production manager there, has just been appointed manager of its Erie, Pa., works. He succeeds Matthew Griswold, who retired Jan. 1 on account of ill health.

J. E. Brobst, with the company since 1903 and enginener of the industrial control enginenering department at Schencetady, since 1923, has been appointed manager of the Bloomfield, N. J., plant to succeed C. D. Knight, who also retired Jan. 1 because of poor health. Mr. Brobst will continue to act in the capacity of engineer of the industrial control department, having general supervision over the engineering departments at both Schencetady and Bloomfield.

* * *

Arthur E. Blackwood, first vice president of the Sullivan Machinery Co., Chicago, was elected president of the company to succeed the late Frederick K. Copeland, at a meeting of the board of directors, held at the company's Boston office, Dec. 31.

Mr. Blackwood has been identified with the Sullivan Machinery Co. for the past 32 years, coming to the company shortly after graduating from the Toronto university as a mechanical and electrical engineer. He later became manager of the company's eastern sales department, with headquarters at New York, which office he held for 23 years. Early in 1920 he was elected director and first vice president in charge of finances, removing to the head office at Chicago.

* * *

J. J. Hasburgh, who on Jan. 1 was appointed manager of sales, reinforcing bar division, Sheffield Steel Corp., Kansas City, Mo., has been with the company for the past nine years, as special salesman in that department.

Lester G. Schraub on the same date became manager of sales, wire division. For the past 17 years he has been affiliated with the Keystone Steel & Wire Co., Peoria, Ill., later for several years as assistant sales manager.

* * *

Arthur W. F. Green resigned Dec. 31 as metallurgist in charge of service detail and sales promotion for the John Illingworth Steel Co., Frankford, Philadelphia, to become sales representative of the Poldi Steel Corp. of America, with headquarters at 245-247 West Eighteenth street, New York. Mr. Green has been affiliated with the Illingworth company since June, 1916, with the exception of nine months in 1926, when he was identified as steel consultant with the W. B. Coleman Co., Philadelphia. In addition to his other duties with the Illingworth company, he served as consultant on heat treatment. He is a member of the American Society for Steel Treating, is secretary and treasurer of that orgaization's Philadelphia chapter, and also is a member of its national publication committee.

* * *

Henry C. Osborn, president of the American Multigraph Co., Cleveland, was recently appointed chief of the Cleveland ordnance district of the United States army, to succeed Col.

Frank A. Scott as director of the industrial preparedness program in the Cleveland district. Alex C. Brown, president of the Industrial Brownhoist Corp., Cleveland, has been named to assist Mr. Osborn. Colonel Scott, who on Nov. 22 resigned the post on account of ill health, has joined Mr. Osborn's advisory committee, of which Samuel Mather of Pickands, Mather & Co., is chairman, and of which Henry G. Dalton, of Pickands, Mather & Co., James A. Campbell, president of the Youngstown Sheet & Tube Co., and Allyn F. Harvey, president of the Pittsburgh Steamship Co., are members.

* * *

Sherwood Bennett, secretary-treasurer of the Capitol Casting Co., Lansing, Mich., was recently elected president of the Lansing Traffic club.

* * *

Fred I. Brown, president of the Arkansas Foundry Co., Little Rock, Ark., was recently elected president of the chamber of commerce there.

* * *

A. L. Foster was re-elected a member of the board of directors of the Galion Iron Works & Mfg. Co., Galion, O., road machinery, at its recent annual meeting.

* * *

T. E. Millsop has been appointed assistant general manager of sales in the sheet and tin plate department of the Weirton Steel Co., Weirton, W. Va.

* * *

I. J. Reynolds was recently appointed foundry superintendent by the Quaker Mfg. Co., Chicago Heights, Ill. Its main executive offices are located at 215 North Michigan avenue, Chicago.

* * *

Hubert de Planche has been placed in charge of sales of imported ores and imported fluorspar for Rogers Brown & Crocker Bros. Inc., New York. Mr. de Planche had been with the American Steel Export Co., New York, in a similar capacity.

* * *

James K. Dickey was recently elected secretary of the Burnside Steel Foundry Co., Chicago. He was graduated from Purdue university in mechanical engineering in 1920 and has been engaged in steel foundry practice ever since.

* * *

A. M. Oliver, who assumes his new duties this month as advertising manager of the Pangborn Corp., Hagerstown, Md., manufacturer of sand blast and dust collecting machinery, has for six years past been identified with the advertising department of the Goodyear Tire & Rubber Co., Akron, O., specializing on mechanical rubber goods, etc. Mr. Oliver, who is a graduate in engineering, has been with the Goodyear organization more than 13 years.

* * *

Fred O. Smith, secretary and manager of purchases, Vulcan Iron Works, Wilkes-Barre, Pa., has been elected vice president. He also is a director of the company and vice president and director of the Wilkes-Barre Iron Mfg. Co., and First National bank, Wilkes-Barre, Pa.

* * *

A. T. Hunt, since February, 1928, district sales manager at Baltimore for the Eastern Rolling Mill Co., that city, has been promoted to sales manager. Prior to going with the Eastern Rolling Mill Co. Mr. Hunt for many years was sales manager of the Seneca Iron & Steel Co., Buffalo.

* * *

J. E. O'Leary, vice president of the Pittsburgh-Des Moines Co. and district sales manager at New York for the Pittsburgh-Des Moines Steel Co., has been elected general sales manager of the latter company with headquarters at Pittsburgh, effective Feb. 1. H. W. Ford has been named to succeed him as New York manager.

* * *

George B. Troxell has been appointed assistant to the manager of sales, carbon bar and billet division, Bethlehem Steel Co., Bethlehem, Pa. Mr. Troxell has been in the Bethlehem company's employ since 1916, for the most part in the operating and metallurgical departments. The last four years he has been research metallurgist in charge of contact work for the Lehigh mills, in connection with alloy steels.

* * *

A. W. Smith, superintendent of the Campbell works, Youngstown Sheet & Tube Co., Youngstown, O., has been made general superintendent of the Campbell plant, in charge of units at Campbell, Struthers and Hubbard.

H. L. Brinker, superintendent of the Brier Hill works at Youngstown, has been made general superintendent, in charge of Brier Hill and Western Reserve properties. Elijas H. Stillman has been appointed superintendent of the Chicago properties to succeed W. B. Gillies. Frank Farrell, who has been in charge of the Youngstown district, which is abolished, has resigned.

* * *

J. Spotts McDowell has been appointed director of research of the Harbison-Walker Refractories Co., Pittsburgh. The scope of the company's research work will be broadened at the central laboratory in Pittsburgh. Mr. McDowell, who has been associated with the Harbinson-Walker company for about 20 years, has made numerous contributions to technical literature. He also has been active in the American Ceramic society, the American Society for Testing Materials, the American Refractories institute, and other societies of which he is a member. He is a graduate in mining engineering of the Massachusetts Institute of Technology.

Steel Furniture Off

Washington, Jan. 8.—November orders for steel furniture went sharply below October, as detailed comparison shows:

	Business Group		Shelving	
	Orders received	Shipments	Orders received	Shipments
	(In Dollars)			
1926				
Total	31,393,171	31,429,140	7,340,351	7,837,017
1927				
Nov.	2,476,230	2,856,181	574,763	590,764
11 mos.	27,910,029	28,365,187	6,731,846	6,686,372
Dec.	2,850,314	2,740,602	619,276	577,910
Total	30,760,343	31,105,789	7,351,122	7,264,282
1928				
Jan.	3,248,165	2,712,663	768,748	680,264
Feb.	3,295,861	2,908,527	741,310	681,999
March	3,283,329	3,169,351	841,098	813,607
April	2,915,344	3,065,637	740,658	716,104
May	3,085,638	3,213,291	732,921	768,988
June	2,764,085	3,009,229	727,060	720,253
July	2,594,216	2,515,482	713,330	722,516
Aug.	2,619,234	2,564,638	863,422	836,105
Sept.	2,689,009	2,754,135	799,850	678,422
Oct.	*3,192,927	*3,158,998	958,726	953,804
Nov.	2,667,680	2,856,569	875,354	915,640
11 mos.	32,365,488	31,928,530	8,772,477	8,505,702

*Revised.

To Begin Building Cars

Birmingham, Ala., Jan. 8.—The Pullman Car & Mfg. Corp., Chicago, which recently purchased the carbuilding equipment of the Tennessee Coal, Iron & Railroad Co. at Fairfield, Ala., will begin work in February on 300 box cars for the Louisville & Nashville railroad. The corporation is also bidding on car requirements of the Illinois Central railroad. Pending the completion of the new car works here, in six or eight months, the Pullman corporation is operating the former Tennessee plant.

1928 Beehive Output Off

Production of beehive coke in the week ended Dec. 29 totaled 86,700 net tons, compared with 88,100 tons in the previous week and 83,100 tons in the corresponding week of 1927. With the last two days of the year not available, 1928 output of beehive coke was 4,363,300 net tons, compared with 6,975,400 tons in the comparable period of 1927, states the federal bureau of mines.

Obituaries

OTIS P. BRIGGS, 72, founder in 1902 of the Minneapolis Steel & Machinery Co., Minneapolis, died Jan. 1, in that city. He was born at Livermore, Me., but at 21 located in Minneapolis. He was first employed by the Minneapolis Iron Works and then by the Pray Mfg. Co. In 1886 he organized the Twin City Iron Works to manufacture engines and power transmission machinery. This he successfully operated for 16 years and then with J. L. Record and George and Ralph Gillette established the Minneapolis Steel & Machinery Co., Mr. Briggs serving as its treasurer.

After six months Mr. Briggs was released to become commissioner of the National Founders' association, of which he was elected president in 1905. This made it possible for him to return to Minneapolis, where in July, 1913, he became president of the H. E. Wilcox Co. He later formed the Northern Motor Car Co., but its operations ceased during the war when men and trucks were commandeered for service. During the war period he was chosen to head the Citizens' alliance, an employers' organization of his city and of it he remained president until his death. Mr. Briggs was one of the original founders of the chamber of commerce of the United States, serving as counsellor from his district. He also was active in the organization of the National Metal Trades association, the national industrial conference board and the National Conference of State Manufacturers' associations. He was a member of the directorate of the Minnesota Employers' association, the Taxpayers' association of Minneapolis and the Manufacturers' club, that city. He was a charter member of the Twin City Foundrymen's association and the Twin City Employers of Machinists' association.

* * *

Oliver W. Hayes, 43, president of the Republic Motor Truck Co., Alma, Mich., died Dec. 25.

* * *

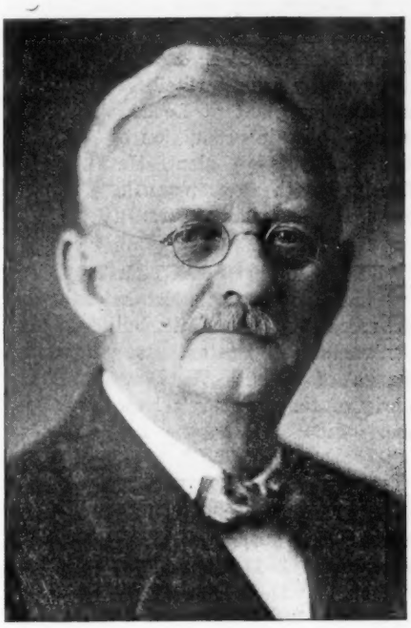
John F. Taylor, 78, first treasurer of the Republic Iron & Steel Co. then with headquarters at Chicago, died Dec. 26 at his home in Pasadena, Calif., where he located after retiring about 22 years ago. He had been ill for the past 18 months. For many years previously, Mr. Taylor had been identified with the iron and steel as well as financial institutions in the Youngstown, O., district.

* * *

G. A. Doeright, 58, president of the Falcon Bronze Co., Youngstown, O., died Jan. 1 at his home in Youngstown, after a brief illness.

* * *

Elverton R. Chapman, 80, retired banker and broker who was an officer in many corporations during a



O. P. BRIGGS

business career of 50 years, died Dec. 22 at his home in Great Neck, L. I. He was president of the Alabama Iron & Steel Co. and of several public utility companies.

* * *

Frank H. Teagle, 49 years old, vice president and treasurer of Bishop & Babcock Mfg. Co., Cleveland, died Dec. 29 at his home in that city.

* * *

Henry Rathbone Micks, president, Rumsey Pump Co., Seneca Falls, N. Y., died Dec. 25. He was born at Clinton, N. C., 74 years ago and graduated from Union college in 1875.

* * *

George F. Blake Jr., 69, head of George F. Blake Jr. & Co., Worcester, Wass., dealers in heavy steel and iron hardware, died Dec. 31.

* * *

George L. Riggs, president, Standard Electric Time Co., Springfield, Mass., manufacturer of electrical time-keeping equipment, died recently at his home in that city. He also was head of the company's Canadian subsidiary.

* * *

Henry W. Honeyman, Pawtucket, R. I., founder and head of H. W. Honeyman & Son, textile machinery manufacturer, died at his home in that city. For 17 years he was superintendent of the Textile Finishing Machinery Co.

* * *

Charles G. Rowlette, vice president and treasurer of the Timken-Detroit Axle Co., Detroit, died, Dec. 24. He had been affiliated with that company for 12 years successively as accounting manager, assistant treasurer, treasurer, vice president and director.

* * *

Jeffry Davis, director of the American Enamel Co., and formerly a director of the Armington & Sims Engine Co., Providence, R. I., died recently at his home there.

* * *

Arthur D. Nichols, manager of the Birmingham, Ala., plant of the American Radiator Co., died recently. Mr. Nichols took charge of the Birmingham plant two years ago, being transferred from the Buffalo works.

* * *

George F. Hutchins, 87, for many years superintendent, Crompton & Knowles Loom Works, Worcester, Mass., died Dec. 12. He was born in Hepburn, Pa., but later moved to East Douglas, Mass., where he learned his trade in the works of the Douglas Axe Co.

* * *

Joseph W. Legg, 41, of the meter engineering staff, Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., and nationally known expert in the study of oscillography, a branch of electrical engineering devoted to the recording and analysis of wave phenomena, died Jan. 2, at Pittsburgh. During his career he developed many electrical devices, chiefly the osiso, a small portable oscillograph for which numerous unusual uses have been found. He also invented the polar high-speed camera, capable of taking 3000 photographs per second.

* * *

Cornelius A. Bickett, 64, chairman of the board of directors of the Chicago Bearing Metal Co. and vice president and director of the Magnus

(*Concluded on Page* 182)

Here and There in Industry

Timely Information Which Records Developments in Various Lines of Productive Enterprise

UNION CHAIN & MFG. CO., Sandusky, O., recently merged with the American High Speed Chain Co., Indianapolis, is completing an addition and moving equipment to Sandusky from the American plant at Indianapolis. W. A. McCosh, vice president of the American company, is works manager of the Union company at Sandusky. J. C. Howe, who was president of the American company, is moving to Sandusky as vice president of the Union company. A. R. Young, sales manager of the American company, is in the sales division of the Union company. Fred Emmons is president and treasurer of the Union company, Walter Hay vice president, J. C. Howe vice president, and Eugene F. Emmons secretary and sales manager.

* * *

HARNISCHFEGER CORP., Milwaukee, has appointed Ed P. Phillips Machinery Co., Richmond, Va., district agent for Virginia territory.

* * *

WICE ELECTRIC CO., Springfield, Mass., is completing an addition to its plant, 80 x 100 feet, of lockjoint metal construction, to provide additional manufacturing facilities.

* * *

HUNTER PRESSED STEEL CO., Lansdale, Pa., is completing an addition to double its production of coil wire springs and afford larger tonnage and variety of wire.

* * *

RUEMELIN MFG. CO., Minneapolis. will move to 588-98 Clinton street, Milwaukee, where it will have considerably enlarged manufacturing facilities.

* * *

VANDERCOOK & SONS, 900 Kilpatrick avenue, Chicago, manufacturer of proof presses and printing equipment, has moved into its new plant at that address.

* * *

ACTIVE PATTERN & MODEL WORKS, 1149 West Harrison street, Chicago, manufacturer of wood and metal patterns, has completed its new shop addition and has it in operation.

* * *

ILLINOIS ELECTRIC CO., a subsidiary of the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., will move about April 15 to a new two-story and basement plant at 113 North May street, Chicago.

* * *

VANADIUM CORP. OF AMERICA has moved its Detroit offices from 1355 Book building to 2440 Book Tower, with C. Newman Dawe manager of the automotive division and T. N. Bourke assistant manager.

* * *

KELLEY STOVE & RANGE CO., recently incorporated, is completing its new plant at Leeds, Ala., and expects to be in production by Jan. 15. R. J. Kelley is president. He has been identified with stove manufacturing in the south for many years.

* * *

GENERAL REFRACTORIES CO. has opened a district sales office at room 509 Marshall building, 40 Central street, Boston. It will be in charge of Nelson W. Bowman, formerly of the company's New York office.

* * *

PITTSBURGH STEEL CO., Pittsburgh, has established new offices merchandise stocks in the South End warehouse, 351 Bryant street, San Francisco. The company is similarly served at Los Angeles and Portland, Oreg.

* * *

FREMONT ALUMINUM CASTINGS CO., Fremont, O., has sold its plant and real estate to Charles J. Miller, president of the Fremont Foundry Co. The company will continue to operate the plant under direction of E. J. O'Farrell, manager.

* * *

WYMAN-GORDON CO., Worcester, Mass., will forge the crankshafts for the recent airplane motor order placed with Pratt & Whitney, Hartford, Conn., by the navy department. Airplane motors and parts to the amount of more than $1,000,000 have been placed by the department.

* * *

MORGAN ENGINEERING CO., Alliance, O., manufacturer of traveling cranes and other equipment, has obtained an extension of two years from creditors in paying off its obligations. The company will operate the next two years as it has the past two, during which it made an unusually good showing in retiring indebtedness.

* * *

OAKES PRODUCTS CO., Indianapolis, manufacturer of automobile parts and stampings, the Hershey Corp., Detroit, and the Houdaille Co., Cleveland, are considering a merger, details of which are being worked out by directors of the three companies.

* * *

FRANK SAMUEL & CO., Phidadelphia, has been reorganized with Frank Samuel, S. A. Cochran and Snowden Samuel as partners. No change will be made in its branch offices or representation in other cities. The business has been in existence since 1893.

* * *

TOMLINSON & CO., Philadelphia, has been organized by S. M. Tomlinson and his son, H. E. Tomlinson, with headquarters at 1500 Walnut street. The firm will deal in iron and steel, alloys and ores. S. M. Tomlinson has been connected with Frank Samuel & Co. since 1893 and a partner since 1896, resigning to form his own company.

* * *

MAGNETIC MFG. CO., Milwaukee, manufacturer of magnetic separators, magnetic clutches and special magnetic equipment, announces that its equipment hereafter will bear the trade name Stearns in addition to the present designation of high duty. The new designation is derived from the name of company officers, R. H. Stearns, president and treasurer, and R. N. Stearns, secretary.

* * *

WROUGHT IRON CO. OF AMERICA, recently formed by merger of the Lebanon Iron Co. and the Scranton Bolt & Nut Co., has completed organization of its sales department. H. M. Clymer is vice president in charge of sales, with headquarters at Lebanon, Pa. C. E. Brodhead will be in charge of sales for New York territory, with offices at 393 Seventh avenue, New York. Albert P. Loesch is in charge of the Philadelphia district, with offices in the Commercial Trust building, Philadelphia. Henry G. Fennell will represent the company at Richmond, Va.,

and John R. Courtright & Co. at Mobile, Ala.

* * *

MORKRUM, KLEINSCHMIDT CORP., 1410 Wrightwood avenue, Chicago, has changed its name to Teletype Corp., with ownership, personnel and policies unchanged.

* * *

AMERICAN BRIDGE CO. has boked an order for a 20-ton electric furnace for installation at the River Rouge plant of the Ford Motor Co., Fordson, Mich., the third of seven units planned for this plant.

* * *

KORSEM MFG. CO., 2007 Elston avenue, Chicago, has moved from its former location on Grand avenue, to obtain larger quarters. The company manufactures screw machine products and does welding.

* * *

SUPER STEELS INC., Cleveland, has opened an office and warehouse at 1811 West Seventy-fourth street, Chicago, with Arch E. Homan as manager. A complete line of alloy steels will be carried in stock.

* * *

JEAVONS CO. and Fremont Automotive Products Co., both of Fremont, O., have been merged under the name of the former. The combined company has leased additional space in a building formerly occupied by the Clauss Shear Co.

* * *

SAMUELS STAMPING & ENAMEL-CO., Chattanooga, Tenn., is installing a continuous enameling furnace to increase its production. The Ferro Enamel Supply Co., Cleveland, is building the furnace, the first in the South.

* * *

WORD SPECIALTY MFG. CORP., Houston, Tex., has been organized by combination of the Houston Pump & Supply Co. with the T. T. Word Supply Co. The new company will manufacture a special line of oil field equipment.

* * *

DRESSER & GORTON INC. is the new name for Dresser Engineering Co., Tulsa, Okla., which specializes in construction and erection of steel buildings for oil field and industrial use. L. L. Dresser and L. H. Gorton comprise the firm.

* * *

MAYER BROS. CO., Brazil, Ind., owner of the former Crawford & McCrimmon Foundry & Machine Works, has been incorporated and will enlarge the operations of the company. It is planned to start manufacture of mining machinery, pumps, power hammers, boilers and engines. The company is formed by Lorenz L. Mayer, Louis Mayer and Bertram L. Mayer.

* * *

F. J. LEWIS MFG. CO., a subsidiary of the International Combustion Engineering Corp., New York, has changed its name to International Combustion Tar & Chemical Corp., with offices at 200 Madison avenue, New York, and 2500 South Robey street, Chicago.

* * *

BRYAN STEAM CORP., Peru, Ind., has taken an unusually large order for boilers. It covers 2000 boilers for delivery in 1929, with option for double that number. The order is placed by a distributor in Greenwich, Conn. The boilers are constructed for oil fuel.

* * *

CUTLER-HAMMER CO has been incorporated with a Delaware charter, consolidating the former Cutler-Hammer Mfg. Co., Milwaukee, and its subsidiaries, Cream City Foundry Co., Milwaukee, and Cutler-Hammer Co. of New York. Beverly L. Worden is president. Offices and works will remain in Milwaukee.

* * *

SMITH-ARMSTRONG FORGE INC., 1209 Marquette avenue, Cleveland, has been organized to manufacture forgings for automotive and machine tool use. E. A. Smith is president and Elizabeth Armstrong is secretary-treasurer. Both formerly were associated with the Machinery Forging Co., Cleveland.

* * *

LUCAS SLIDING VALVE CO., Pittsfield, Mass., is being organized to manufacture an automobile engine invented by Ralph Lucas, formerly with the Pierce Arrow Co. and the American LaFrance Fire Engine Co. Mr. Lucas, Charles W. Faulkner and Abraham Goldman are the incorporators.

* * *

ANCHOR WELDING SERVICE, 4715 Chicago avenue, Chicago, has taken a contract from the Chicago & North Western railroad for welding 12 bridges in Chicago. The company is planning to enter the structural welding business. G. W. Hettrick is president, treasurer and general manager, and A. R. Jacobson is vice president and secretary.

* * *

HASKINS-HAIRE WORKS INC., Worcester, Mass., has been organized to take over the business of the American Grille & Wire Works, 79 Beacon street, Worcester. The same line of manufacture will be continued. Daniel A. Haire is president, Martin V. Haskins vice president and treasurer, and Edward A. B. Moos, clerk.

* * *

PAUL MAEHLER CO., 2210 Lake street, Chicago, has appointed G. J. Hawkey, Cleveland Duplex Machinery Co., Penton building, Cleveland, as its representative in that terrtiory.

* * *

WRIGHT-TUTTLE AIRCRAFT MOTOR CORP., a new company, has purchased the International Rubber Works factory at Anderson, Ind., and will manufacture a Belgian type motor, according to V. L. Wright, president.

* * *

GILBERT & BARKER MFG. CO., Springfield, Mass., has appointed M. K. Epstein, Springfield, Mass., its sales agent for its oil burning equipment. Mr. Epstein has been manager of the company's industrial sales.

* * *

BENDIX SERVICE CORP. has been formed by the Bendix Corp., Chicago, to establish a chain of automobile service stations in the larger cities. Directors include Vincent Bendix, W. C. Buetter, Ferber Marshall and David Beecroft.

* * *

WILLIAM JESSOP & SONS, 91 John street, New York, have sold their property at that address after occupancy of 85 years and will occupy the second floor at 121 Varick street. The company imports tool and die steel from the Jessop works in England.

* * *

STANDARD BOILER & PLATE IRON CO., Niles, O., has passed into the hands of John Warne and Edgar J. Riley, formerly officials of the W. B. Pollock Co., Youngstown, O., who have bought a majority interest. The plant produces riveted plate and tank work.

* * *

EDGAR T. WARD'S SONS CO., steel warehouses, has opened a warehouse at 39 River street, Buffalo, It is in charge of C. G. Bothwell. A full stock will be carried, including cold finished bars, cold rolled strip and flat wire, cold drawn seamless tubing, polished drill rods and music spring wire and Swedish steels.

* * *

CHRYSLER MOTORS has been incorporated as a holding company for the automotive manufacturing units controlled by Walter P. Chrysler. All Chrysler and Dodge cars and trucks will be governed by a common policy under the new plan. This is said to be the third largest organization in the industry with $231,000,000 capital and annual earnings of $20,000,000 to $30,000,000.

Obituaries

(*Concluded from Page* 179)

Metal Co., Chicago, died Dec. 25 at his winter home at Miami Beach, Fla.

* * *

Charles F. Fuerst, 42, superintendent of the Crucible Steel Casting Co., Milwaukee, died Jan. 3. He had been ill with heart disease for nearly two years.

* * *

E. E. Baker, 73, president of the Kewanee Boiler Co., Kewanee, Ill., died recently in Hot Springs, Ark. Mr. Baker had been president of the Kewanee company since it was organized as such in 1892.

* * *

John Gandee Dean, 83, president and treasurer of Dean Bros., Indianapolis, manufacturers of pumps, died Dec. 32 in Indianapolis. Mr. Dean was widely known because of his continuous studies and writings in astronomy.

* * *

Thomas F. Kent, vice president of the Magnus Co. 111 Broadway, New York, railroad supplies, died of heart disease at the Presbyterian hospital, that city, Dec. 25. Mr. Kent had been with the Magnus Co. for 30 years.

* * *

Jacob Strader Jr., 54, former chief engineer in the Youngstown, O. district of the United States Steel Corp., died recently in Cleveland. For years he was developing engineer for the Union Carbide & Carbon Corp. and chief engineer for the Electric Furnace Products Co. Ltd., of Norway.

* * *

David M. Weir, 48, vice president and one of the founders of the Weirton Steel Co., Weirton and Clarksburg, W. Va., and Steubenville, O., and president of the West Virginia Manufacturers' association, died at his home in the latter city Jan. 6 of pneumonia. He, with his brother, Ernest T. Weir, president, established the company. He was born in Pittsburgh and educated in the public schools there. In 1895 he was employed in the office of the Oliver interests there and in 1899 he left to enter the employ of the Monongahela Tin Plate Co., Pittsburgh, where he remained until 1901, then becoming chief clerk for the same company. In 1904 he was promoted to be plant manager, resigning after one year to become identified with the Phillips Tin Plate Co., Clarksburg. He was connected with numerous business enterprises at the time of his death. He was a member of the Duquesne club, Pittsburgh Athletic association, Westmoreland Country club and Traffic club, all of Pittsburgh; the Seaview Country club, Atlantic City, N. J., and the Steubenville Country club.

* * *

Oliver H. Burgham, 66, who had been engaged in the operation of steel plants in England and the United States for nearly 50 years, died Dec. 13 at Pasadena, Calif. He was manager of the Weirton Steel Co.'s plant at Clarksburg, W. Va., for several years and had been associated with William Banfield in the operation of the Chester, W. Va., mill.

* * *

Edward James Taylor, 74, former chief engineer of the Pittsburgh Coal Co., Pittsburgh, and a leading figure in Pittsburgh engineering circles, died Dec. 4 at his home in Pittsburgh. Mr. Taylor was a member of the Engineers' Society of Western Pennsylvania, the American Institute of Mining and Metallurgical Engineers and a number of other societies and clubs. He built a number of coke plants in the Pittsburgh-Connellsville, Pa., district.

* * *

Matthew Andrews, 63, chairman of the board of the M. A. Hanna Co., Cleveland, and director in numerous subsidiaries of that company and several other interests, died Jan. 5 at his winter home, St. Augustine, Fla.

Mr. Matthews was dock superintendent for the J. W. Ellsworth Co. previous to his connection with the Hanna firm. When the Pennsylvania ore docks were taken over by the then M. A. Hanna & Co. in 1904, he remained as superintendent and on Jan. 1, 1906, became a partner with D. R. Hanna Sr. and Robert L. Ireland. This relation continued until the incorporation of the M. A. Hanna Co. in 1922, when he became chairman.

Mr. Andrews was a director of the Musterole Co., Thew Shovel Co. and Cleveland & Pittsburgh Railway Co. in addition to connections with the following M. A. Hanna Co. subsidiaries:

Calumet Transportation Co., director; Cambria Steamship Co., vice president and director; Detroit Iron & Steel Co., vice president and director; Eastern Coal Dock Co., president and director; Eastern Steamship Co., director; Ironville Dock & Coal Co., president and director; La Belle Steamship Co., director; Lower Lakes Dock Co., president and director; Ohio & Western Pennsylvania Dock Co., president and director; Producers Steamship Co., director; Virginia Steamship Co., director, and Wakefield Iron Co., director.

Steelmakers Guard Trade at Rate Hearing

(*Concluded from Page* 170)

turers association, St. Louis, stated the proposed scale places an extreme burden on long-haul traffic to the advantage of short-haul business.

J. W. Goodman objected on behalf of Milwaukee users of iron and steel to the increase from 9½ to 14½ cents in the rate from Chicago to Milwaukee recommended in the proposed scale.

C. D. Drayton, Cumberland Steel Co., Cumberland, Md., stated that the differential was 1½ cents per 100 pounds over Pittsburgh on traffic westbound out of Cumberland and 1½ cents under Pittsburgh eastbound prior to the application of the Jones & Laughlin scale when the westbound differential under which 70 per cent of the company's business moves was raised over Pittsburgh to as much as 4½ and 5½ cents. This prevents the company from doing business profitably in its most important marketing territory, accordnig to Mr. Drayden, and he contended that the old differential should be restored.

C. R. Webber, representing the Baltimore & Ohio railroad, opposed maintenance of the Johnstown-Cumberland differential. The two-day argument before the interstate commerce commission concluded with statements by several other representatives of the railroads and shippers, among whom were W. K. Williams, for Michigan carriers; E. H. Burgess, for eastern trunk lines; James Garfield, for New England carriers; M. B. Pierce, for Erie railroad; E. A. Smith, for Illinois Central railroad; R. T. McKenna, for Central Alloy Steel Corp., Canton, O.; R. D. Parker, for Corrigan-McKinney Steel Co., Cleveland, and J. K. Hiltner, for United States Cast Iron Pipe & Foundry Co., Philadelphia.

Barge Line To Enlarge

Pittsburgh, Jan. 8.—The American Barge Line, operating a line of boats between Pittsburgh and New Orleans, will spend $1,000,000 for floating equipment and $500,000 for terminal improvements in the near future, according to George S. Bassett, general agent here. Plans now are under way in the general office, Louisville, for the early completion of these plans.

During the past year the American Barge Line moved south a total of 100,323 net tons, while 13,308 tons was moved north toward Pittsburgh.

Collector of Customs Camp, at Washington, has ruled that phosphor copper is dutiable at 25 per cent ad valorem.

Machinery

Opening of Year Brings Increased Selling of Equipment—Brisk Inquiry Received and Good Orders Are Being Placed

ONE large list placed by a New York manufacturer of printing presses covers its requirements for the current year and makes an encouraging start for sellers. Demand in general is heavier since the turn of the year and indicates a better condition than late in 1928. Toolmakers are well supplied with orders and deliveries on some lines are well deferred. This is especially true of milling machines and some sizes of lathes. Some price advances have been announced, showing the general tendency upward under the stronger demand. In New England a heavier demand for textile machinery has developed and considerable replacement is being planned. Airplane builders are also furnishing considerable inquiry for additional equipment.

New York, Jan. 8.—Placing of more than $400,000 of equipment by R. Hoe & Co., this city, features recent machine tool trading here. This business, a portion of which was closed as the year ended, represents virtually all of this company's present requirements. A few engine lathes are understood to be still pending. While a number of builders participated, one or two concerns are reported to have received close to $100,000 each.

Other buying has involved few large orders, but has been in brisk volume. Sellers generally are pleased over the outlook not only for this month but for a number of weeks. Considerable inquiry has been carried over from last year and is scheduled for early action.

The General Electric Co., Schenectady, N. Y., continues unusually active. While recent purchases have been moderate, substantial inquiries continue to be issued, primarily for its refrigerator department. In fact, a good proportion is understood to be for the production of the company's new water cooler.

Deliveries on a number of lines continue well advanced. It is difficult to obtain shipment on the more popular sizes of milling machines under six to eight weeks; grinders under two to three months and heavy boring mills, 10 weeks. Lathes, running up to possibly 20 inches, can be had within two to four weeks, but on some of the larger sizes deliveries are much more extended. This situation has been aggravated of late by the influenza epidemic, which has affected operations at a number of the larger producing centers.

The price situation is featured by an increase of 10 per cent in some lines of surface grinders. About a month ago a similar increase was announced on center type grinders and on punch presses, and increases in other lines are expected shortly.

Worcester, Mass., Jan. 8.—Improvement is noted in the machine tool market with the new year. This appears especially true in the textile field, which has been spotty and inclined to dullness for a long period. Several mills are placing orders for textile equipment and others are figuring replacements. Much textile machinery in New England is in need of replacement and the outlook is promising for this to take place during first half. An automobile interest placed a list of production tools this week. General demand appears steadier and plants are in most instances rushed to meet delivery. Inquiry is broader and more active, especially from metalworking plants and for grinding machinery, which has closed a remarkably successful year. Automatics are going in good volume to radio makers and the airplane industry is inquiring for a good volume of machinery and parts. Woodworking equipment is also stimulated and railroad buying appears about to develop in at least one quarter. Machine part makers are operating against good orders and foundry melt has stepped up. Used tools are fairly active, but prices appear no firmer.

CRANE ORDERS PLACED

Five crawler cranes for Boston & Maine railroad, to Link-Belt Co.

Six crawler cranes, equipped with 1¼-yard buckets for export to Europe, placed through a New York company with Northwest Engineering Co.

Two special traveling gantry cranes, approximately 25 tons capacity each, 18-foot lift, for Island Coal & Trading Co., 17 Battery place, New York, for operation in Newfoundland to Ohio Locomotive Crane Co.

Two 25-ton locomotive cranes and one 150-ton wrecking crane for Missouri Pacific railroad, to Industrial-Brownhoist Corp.

Among single orders were: 15-ton, 5-motor soaking pit crane, 70-foot span, for Saucon plant of Bethlehem Steel Co., Bethlehem, Pa., to Morgan Engineering Co.; 40-ton locomotive crane for export to China reported placed with Ohio Locomotive Crane Co.; 15-ton handpower crane, 50-foot span, for Standard Oil Co. of New Jersey, for export, to New Jersey Foundry & Machine Co.; 10-ton handpower crane, 38-foot span for Flintkote Co., Little Ferry, N. J., to New Jersey Foundry & Machine Co.; 5-ton used crawler crane for Moses Ehrlich Iron & Metal Co., Springfield, Mass., to Industrial-Brownhoist Corp.; 35-ton used McMyler-Interstate crane for unnamed purchaser, to Morris Engineering Co.

H. D. Conkey & Co., Mendota, Ill., have entered the following orders for cranes: 2-ton single I-beam crane, to municipality of Oxford, Miss.; two 12-ton capacity sets of end trucks, to Stupp Bros. Bridge & Iron Co., St. Louis; one 2-ton set end trucks to Chicago Electric Co., Chicago; 2-ton push crane, 20-foot 8-inch span, to International Molding Machine Co., Chicago; 2-ton push crane to Pyott Foundry Co., Chicago; ½-ton jib crane to Asbestos Shingle Slate & Sheathing Co., Prospect Hill, Mo.; 3-ton single I-beam gantry crane to Griess-Pfleger Tanning Co., Chicago; 6-ton double girder 3-motor twin hook crane to Dallas Brass & Copper Co., Chicago; 5-ton hand power underhung crane to States Improvement Co., Chicago; 15-ton wire rope drum hoist, to Continental Oil Co., Denver; 5-ton hand geared crane to Laclede Steel Co., Alton, Ill.; and 8-ton capacity single I-beam crane, 3-ton 43-foot 6-inch span double girder electric crane, six 1-ton, one 6-ton, one 4-ton, one 2-ton, 4-ton 4-beam underhung motor driven crane, 3-ton 3-motor single I-beam crane, to unstated customers.

CRANE ORDERS PENDING

25-ton standard locomotive crane for Merritt, Chapman & Scott, 17 Battery place, New York; 5 to 7½-ton used overhead crane, 58-foot span, for Miles P. Brown Boiler Works, Franklin, Pa.

5 to 7-ton used overhead crane, 55-foot, 4-inch span, for Mansfield Iron Works, Brooklyn, N. Y., with alternate of used gantry crane with 45-foot span and 15-foot overhang.

Pittsburgh, Jan. 8.—Machinery sales are fair to good, some interests closing several large jobs which have been pending for some time. Inquiry also is expanding and sellers regard the outlook as promising. Westinghouse Electric & Mfg. Co. has issued its list for first quarter requirements, the total of which is slightly smaller than normal. Carnegie Steel Co. is not expected to close for several weeks on its pending list for tools for its Duquesne works. The Baltimore & Ohio railroad has issued an inquiry for six tools consisting of lathes, planers, milling machines and drill presses for its Baltimore shops. Crane inquiry is quiet.

Cleveland, Jan. 8.—Two machine tool manufacturers announced a price increase at the beginning of this week, in one case amounting to 2½ per cent. Dealers and manufacturers of machine tools report an encouraging outlook for the remainder of this month. A large number of inquiries are before makers for quotation, from scattered districts and from miscellaneous manufacturing concerns. The brisk demand for production tools includes few large lists, most requirements calling for one to five items and for quick delivery.

Chicago, Jan. 8.—The year is opening with spirited inquiry for machine tools, and a large carry-over of orders from December, which will make billing for the month unusually heavy. General orders likewise are active. Austin Mfg. Co., Harvey, Ill., has closed on about $25,000 worth of tools, and a number of concerns with foundries have ordered equipment. International Harvester Co. has a heavy program in prospect for the year, which will involve new equipment for its tractor and implement divisions. A Chicago industrial concern has purchased a lathe, 36 and 16-inch shapers, milling machine and radial drill for an eastern plant, and a Rockford, Ill., manufacturer bought an 18-inch lathe. A number of radial drills were sold. Nothing new has developed in inquiry from western railroads.

American Machine & Brass Co., Dallas, Tex., has changed its name to Kennedy Machine & Brass Co.

CONSTRUCTION and ENTERPRISE

Concise Timely Business Building Opportunities from Field of Industry

North Atlantic

BRIDGEPORT, CONN.—Bridgeport Brass Co. is building a large addition to its plant.

BALTIMORE—Bartlett-Hayward Co., Scott & McHenry streets, plans the construction of a plate shop for its plant, to be 1-story, 50 x 300 feet. Equipment contracts have been let.

BALTIMORE—Lockwood-Greene Engineers Inc., 40 North Michigan avenue, Chicago, is architect and engineer for the plant to be constructed here for Edward Katzinger Co., 1949 Cicero avenue, Chicago.

BALTIMORE—Hospital for Women of Maryland, Lafayette and John streets, will build a service building and boiler room at 139 Mosher street. The general contract for the project has been awarded to Frainie Bros. & Haigley, 19 West Franklin street.

TOWSON, MD.—Black & Decker Mfg. Co. has awarded the general contract for the construction of a 1-story plant addition to W. H. Sands, Pennsylvania avenue, Towson.

BRIDGEWATER, MASS.—Board of education plans the construction of a power plant at the state normal school. R. D. Kimball Co., 6 Beacon street, Boston, is engineer for the project.

EAST SPRINGFIELD, MASS.—Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., plans to build another unit to its plant here, to be 100 x 602 feet. It will be devoted to the radio department.

WORCESTER, MASS.—Standard Foundry Co., Southgate place, soon will start work on a 2-story addition to its plant.

WORCESTER, MASS.—Sleeper & Hartley Inc., manufacturers of wire mill machinery, are building an addition to the blacksmithing department.

JERSEY CITY, N. J.—Liberty Auto Radiator Co. has awarded the general contract for a 2-story repair shop and loft building, to F. Crahay, 3772 West Boulevard.

LAMEBRTVILLE, N. J.—Hobson Flatware Co., Lansdale, Pa., has awarded the general contract for the construction of a plant to J. S. Bailey, Doylestown, Pa.

MAPLEWOOD, N. J.—Kroydon Co., Burnett avenue, plans the construction of a 1-story golf club manufacturing plant, 30 x 150 feet. D. A. Hopper, 22 Ridgewood avenue, Irvington, N. J., is architect.

WINDSOR, VT.—Windsor Foundry Corp. has started work on an addition to its gray iron foundry.

Southern States

BIRMINGHAM, ALA.—Universal Metal Mfg. Co., Martin building, Harold McDermott president, plans to expand its plant and to increase production.

ELDORADO, ARK.—McMillan Petroleum Products Corp. plans construction of an oil refinery at Norpholet, Ark. An initial daily capacity of 3000 barrels is called for.

PINE BLUFF, ARK.—Arkansas Airplane Cotton Dusting Co. Inc. plans the erection of a hangar to accommodate 12 planes, a machine shop for the repair of planes, etc.

ORLANDO, FLA.—Utilities commission plans the erection of a downtown substation.

LOUISVILLE—Shannon Spring Bed Mfg. Co., 659 South Ninth street, has acquired buildings at Thirteenth street and Garfield avenue, from Louisville Industrial Properties Corp., formerly occupied by Mercury Body Corp. The Shannon company will move its plant there and make improvements.

MANSFIELD, LA.—The expansion of the DeSoto Foundry referred to in the Nov. 22 issue has been completed and the bond issue recently voted was for its financing.

BILOXI, MISS.—City of Biloxi has acquired a site for the establishment of an airport and has awarded grading and clearing contracts.

MARION, N. C.—Jupollo Public Service Co. Inc., New Medical Arts building, Asheville, has acquired a hydroelectric plant here.

MAUD, OKLA.—Pure Oil Co. is erecting a

Resale Equipment News

MACHINERY and equipment of the Milwaukee Dry Dock Co., Milwaukee, will be sold at auction Jan. 15 by Samuel T. Freeman & Co., auctioneers, on the premises. The sale will be by separate lots only and immediate delivery will be given as the sale is not subject to court confirmation. The equipment consists of that used in a pipe shop, machine shop, blacksmith shop, air hammer shop, boiler house, carpenter shop, punch shop and other miscellaneous material. In all 433 lots are listed.

* * *

Acting for the bondholders, William Duke Jr. has bid in the plant and machinery of the Scio Mfg. Co., Hornell, N. Y. The concern was originally the Standard Turbine Corp., and was engaged in production of steam turbines. It is believed the purchase of the assets means permanent discontinuance of operations, suspended for some time following a foreclosure action.

* * *

Judge Frank B. Thorn has signed an order directing sale of the assets of the Marr Bronze Foundry Inc., Buffalo. The assets have been assigned to Roland H. Tills for the benefit of creditors.

* * *

All the rolling stock, buildings, machinery, etc., of the Tulsa Street Railway Co., Tulsa, Okla., will be sold at public auction, Jan. 23. Clarence Kline, 731 West Fifth street, Tulsa, is receiver for the company.

Sales Calendar

Jan. 15—*Auction sale of Milwaukee Dry Dock Co., Milwaukee.*

Jan. 23—*Public auction of machinery, buildings, etc., of Tulsa, (Okla.) Street Railway Co.*

Feb. 25—*Bids opened on operating plants of Puget Sound Electric Co., Tacoma, Wash.*

machine shop on its producing leases to take care of pipe threading and light tool repairs.

SAPULPA, OKLA.—Continental Oil Co. is building a car repair shop for light repair work on tank cars at its refinery.

SEMINOLE, OKLA.—Dresser & Gorton Inc., 738 Mayo building, Tulsa, has been awarded contract for erection of Skelly Oil Co. and Slick Oil Co. combination air and gasoline plant in Sec. 6-9-6. Stefco Steel Co. was awarded building contract.

TULSA, OKLA.—Tulsa Auto Spring Co., 822 East First street, L. M. Brock manager, plans construction of new plant for manufacture of auto springs if a sutiable site can be secured.

TULSA, OKLA.—R-S Mfg. Co., manufacturer of refiners' laboratory equipment, is erecting a plant on East Fourth street and Kenosha avenue. W. A. Schleuter is president.

TULSA, OKLA.—Wheatley Bros. Brass Works contemplates erection of new plant at Hale station, Sand Springs road. M. F. Hampton is manager.

TULSA, OKLA.—Oklahoma Steel Castings Co., 1200 North Lewis street, has awarded the general contract for the construction of a 1-story foundry unit to J. R. Forner Co., Ritz building.

GREENVILLE, S. C.—Williams Flying Service Inc., Errett Williams manager, plans the erection of an airplane repair plant at the municipal airport, to contain approximately 1000 square feet. Ultimately the company plans to manufacture airplanes.

SPARTANBURG, S. C.—Standard Looms Inc., Isaac Andrews president, 518 East Main street, has let the general contract for installation of high pressure heating system to Poe Piping & Heating Co., 108 South Main street, Greenville.

MARYVILLE, TENN.—City of Maryville plans the construction of an electric light plant.

ABILENE, TEX.—Phillips Petroleum Co., Bartlesville, Okla., proposes to build an absorption type gasoline plant in southwest Jones county oil fields, section 14, Texas & Pacific railroad survey.

BARREDA, TEX.—Barreda Irrigation district plans the construction of a pumping plant in connection with an irrigation project.

BIG SPRING, TEX.—Big Spring Pipeline Co. pump station near here was damaged by fire.

DALLAS, TEX.—City of Dallas plans to issue $400,000 bonds for the construction of an electric plant at Bachman's dam to operate pumping system and furnish power for street lighting, Oak Cliff pumping units, etc.

DALLAS, TEX.—W. D. Kennedy, operating the Kennedy Machine & Brass Co., 2236 Live Oak street, has acquired a 2-acre tract at 3110 Oak Lane avenue, with a 1-story building, 100 x 300 feet, for a group of buildings. The Kennedy company will erect a new unit at this location in the near future.

GALVESTON, TEX.—Contract for erection of warehouse, concrete and steel, 120 x 1200 feet, at Texas City for Texas City Terminal Co. has been let to R. C. Berry & Co., Keystone building, Houston.

HOUSTON, TEX.—T. T. Word Supply Co. has taken over Houston Pump & Supply Co. and has organized Word Specialty Mfg. Corp. for manufacture of oil field specialties. Enlargement of its machine shop is planned.

HOUSTON, TEX.—United Gas Co., through its subsidiary, Greenwood Production Co., will build an absorption type natural gasoline plant in the Bethany, Tex. gas field. Daily capacity of the plant will approximate 30,000,000 cubic feet of gas.

JACKSONVILLE, TEX.—Humble Oil & Refining Co. has acquired a site at Oak and Rusk streets and will erect a large warehouse and machine shop.

KINGSVILLE, TEX.—Missouri-Pacific railroad, Missouri-Pacific building, St. Louis, plans the immediate construction of a new plant to replace the burned coach repair shed and to make other extensions here during 1929.

PORT ARTHUR, TEX.—General offices, yard terminals and marine terminals for Central Texas & Gulf railroad will be constructed at Port Arthur, according to announcement by T. A. Hamilton, executive vice president.

SINNET, TEX.—City of Sinnet has awarded the contract for improvements to waterworks and distribution systems to Frick Construction Co., Plainview, Tex.

AURORA, ILL.—All-Steel Equipment Co., Griffith avenue, has awarded the general contract for a 1 and 2-story plant to Carl W. Linder, 468 Lebanon street. (Noted Nov. 8.)

CHICAGO—Peoples Iron & Metal Co., 5838 Loomis boulevard, plans the construction of a 2-story manufacturing plant. New bids will be taken on the general contract soon.

CHICAGO—Sub-contracts have been awarded by Patterson & Hartrich, general contractors, 140 South Dearborn street, for the 2-story manufacturing and warehouse building being constructed for the Wade Iron Sanitary Mfg. Co.

CHICAGO—Ludlow Typograph Co., 2032 Clybourn avenue, has awarded the contract for the construction of a 4-story plant, 64 x 135 feet, to Schmidt Bros. Construction Co., 22 East Huron street.

CHICAGO—Commonwealth Edison Co., 72 West Adams street, has awarded the general contract for a 1-story locomotive house to Kritzer Construction Co., 515 West Thirty-fifth street. (Noted Nov. 29.)

FT. WAYNE, IND.—Old Fort Tire Co. has awarded the contract for the construction of a machine shop and service station to E. R. Ellerman, 4538 South Lafayette street.

FT. WAYNE, IND.—John Deere Plow Co., 1325 Third avenue, Moline, Ill., has awarded the general contract for the construction of a 4-story plant, 100 x 100 feet, to Indiana Engineering & Construction Co., 201 Central building.

GARY, IND.—Pacific Electric Mfg. Co., San Francisco, plans the construction of a 1-story plant and office building. I. M. Cohen, 738 Broadway, Gary, is architect.

INDIANAPOLIS—Board of health is preparing plans for the construction of a power plant and service building at 960 Locke street. C. R. Ammerman, 925 Continental Bank building, is engineer for the project.

LOGANSPORT, IND.—International Harvester Co., 606 South Michigan avenue, Chicago, has awarded the general contract for the construction of two buildings, 70 x 100 feet, to H. Hedde, 309 Seventh street.

NEWCASTLE, IND.—Plans are under way for an 80-foot extension to the present forge room of the Chrysler Corp.'s plant here. Additional equipment will be installed.

VINCENNES, IND.—Central Foundry Co. has started plans for rebuilding a structure damaged in a recent fire. The building housed much plant equipment.

BATTLE CREEK, MICH.—James Neon Lights Inc. has been formed to manufacture neon gas advertising signs and will construct a plant soon on a site already selected.

DEARBORN, MICH.—A power house is included in the plans for the construction of a museum here, to be built for Henry Ford. Robert O. Derrick, Detroit, is architect for the project.

DETROIT—H. Kiefer hospital, 1300 Beaubien street, will make power house alterations. Albert Kahn Inc., 1000 Marquette building, is architect and engineer.

DETROIT—Contract for the construction of a pumping station for the Detroit department of public works, city hall, has been awarded to Lennane & McIlvenna.

DETROIT—Kelsey-Hayes Wheel Corp. has awarded the general contract for a plant to Everett Winters Co., 1651 East Grand boulevard Detroit. A storage building will also be built.

DETROIT—Murray Corp. of America, Russell and Aberle streets, has awarded the general contract for a 6-story building to be erected on Russell street, to H. G. Christman & Burke Co., Detroit. (Noted Nov. 29.)

JACKSON, MICH.—Fargo Engineering Co. plans the establishment of a 4000-horsepower development project on the Kalamazoo river, between Allegan and Lake Michigan.

LANSING, MICH.—Melling Forge Co. has started work on a new plant addition to be utilized for trimming presses.

MUSKEGON, MICH.—Lakey Foundry & Machine Co. plans an expansion program.

AKRON, O.—Tappan Corp., recently incorporated for $100,000, will manufacture steel products for home building. Its plant will be on the Akron, Canton & Youngstown railroad east of this city. Operations will be started Feb. 1.

CLEVELAND—Sterling Brass Co., 9600 St. Catherine avenue, has awarded the general contract for the construction of a 3-story manufacturing plant to Julius Miller, 10819 Drexel avenue.

CLEVELAND—Murray-Ohio Mfg. Co., 1115 East 152nd street, has awarded the general contract for the construction of a 2-story stamp-

ing plant, 64 x 239 feet, to Dresser Co., the Arcade. (Noted Dec. 20.)

CLEVELAND—Gustav Schaefer Co., formerly the Gustav Schaefer Wagon Co., 4180 Lorain avenue, has reopened its body plant, rebuilt after a fire which damaged it a year ago. The capital of the company has been increased to $1,000,000.

COLUMBUS, O.—Columbus Heating & Ventilating Co., 425 West Town street, advises that it has awarded to Boyajohn & Bahr Inc. the contract for a 3-story addition to a building recently purchased at 400 Dublin avenue.

COLUMBUS, O.—Ebinger Sanitary Mfg. Co., 184 Lucas street, has awarded the general contract for a 1-story addition to its plant to E. Elford & Son, 555 South Park street, for a 1-story addition to the plant.

LIMA, O.—Ohio Power Co. plans extensions and improvements to its various power stations including installation of new units at Philo, O., and the construction of a power line to Fostoria, O.

SALEM, O.—National Sanitary Co. plans the construction of several plant extensions.

TOLEDO, O.—Sun Tool & Machine Co., incorporated recently, advises that it will manufacture tools, dies and special machinery and equipment. It does not expect to build a plant at present but will locate in the Toledo Factories building. Most of its equipment has been bought. (Noted Dec. 20).

ELKINS, W. VA.—City of Elkins votes in March on the establishment of a municipally-owned electric light plant.

MARINETTE, WIS.—A. F. Hoffman Co., manufacturer of wood and metal toys and novelties, plans to build a new plant here.

MILWAUKEE—Hamilton Metalplane Co., 530 Park street, and the Hamilton Aero Mfg. Co., 60 Keefe avenue, have made plans for extensive enlargements of production in 1929. The latter concern has acquired the former Edmonds shoe plant at Burleigh and Bremen streets and will increase its output to 50 propellers a day. The former company is taking additional space in its plant.

RACINE, WIS.—Hamilton Beach Mfg. Co., E. O. Goss president, Rapids drive, plans the construction of a foundry. A. L. Flegel, 208 Baker block, is architect.

RACINE, WIS.—J. I. Case Threshing Machine Co., 700 State street, is having plans made by Architect Frank J. Hoffman, Racine, for an addition to its branch plant and warehouse at Winnipeg, Man., Canada. Bids will be taken early in the spring.

RACINE, WIS.—Link-Belt Co., Chicago, has been given the contract for the coal and ash handling equipment in connection with the improvement and enlargement of the steam generating plant of the Racine works of the Nash Motors Co., Kenosha, Wis.

SHEBOYGAN, WIS.—Wisconsin Power & Light Co., Madison, Wis., has purchased a 220-acre site on Lake Michigan, south of Sheboygan, for a proposed new steam generating plant to be built in 1929-30. L. P. Fessenden is district manager at Sheboygan. E. T. Kallevang, Madison, is chief engineer.

SHEBOYGAN, WIS.—Wisconsin Public Service Corp., A. F. Davey district manager, 402 North Eighth street, announces an improvement project in connection with its local gas plant. Bids will be taken about March 1 on boiler house, water gas generator house, condensor house, scrubber building, machinery building, offices, laboratory, coal and coke handling equipment, separators, and a battery of 15 coke ovens. The company is a subsidiary of the Byllesby Engineering & Management Corp., 231 South La Salle street, Chicago.

SOUTH MILWAUKEE, WIS.—Line Materials Co., South Milwaukee, maker of electrical conduit, etc., will start work soon on a branch plant, 60 x 105 and 55 x 100 feet, 1-story, at Barton, Wis., near West Bend. W. D. Kyle is general manager.

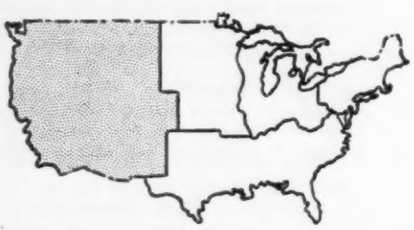
SPRINGFIELD, MO.—Heckenlively & Mark, 642 Landers building, are preparing plans for turbine, generator and equipment for electric plant, power house, etc., at Roaring river for Dr. T. M. Sayman.

ST. JOSEPH, MO.—Bird-Wing Commercial Aircraft Co. plans the addition of new equipment necessary for the production of 30 airplanes a month. A new plant, 100 x 200 feet, will be erected shortly after May 1.

ST. LOUIS—St. Louis Public Service Co., Martin Arheiger construction superintendent, plans a 2-story and basement office building and shop, 27 x 100 feet and 30 x 40 feet.

ST. LOUIS—General Metal Refining Co., 3200 North Broadway, Joseph Mathes president, has acquired property containing 78,000 square feet for smelting plant additions.

SIDNEY, NEBR.—City of Sidney, J. Ponquett clerk, plans power plant improvements. Grant, Fulton & Letton, 525 South Thirteenth street, Lincoln, Nebr., are engineers.



Western States

LOS ANGELES—Los Angeles Can Co., 303 San Fernando road, has awarded the general contract for a 1 and 2-story plant, 300 x 500 feet to Scofield-Twaits Co., Pacific Finance building.

TRACY, CALIF.—Tracy Irrigation District, J. C. Chrisman secretary, plans the construction of pumping plants in connection with an irrigation project.

PORTLAND, OREG.—Bids are being received by L. L. Dougan, architect, Kraemer building, for a reinforced concrete warehouse to be erected by K. M. Bowman for the Wickwire-Spencer Steel Corp. at Fifteenth and Savier streets.

HOQUIAM, WASH.—Lamb Machine Co. is having a new pattern shop constructed by Nelson & Johnson, general contractors.

TOLEDO, WASH.—Voters have authorized $25,000 bonds to be appropriated for rebuilding the municipal water system.

West Central

MINNEAPOLIS—Dominion Electric Co., 116 First avenue north, plans the construction of a plant addition. The architect is not selected yet.

KANSAS CITY, MO.—Gasconade River Power Co., 1015 Baltimore avenue, plans the construction of a hydroelectric plant and dam on the Gasconade river.

Canada

CALGARY, ALTA.—Dominion Bridge Co. Ltd., Montreal, Que., has purchased a site of 13 acres here and proposes to start work soon on the erection of a structural steel fabricating plant. In addition the Bridge company has acquired control of the Riverside Iron Works here and proposes to build an addition to this plant next spring.

VICTORIA, B. C.—British Columbia Electric railroad plans to proceed with the installation of a fourth unit at Jordan river to provide 15,000 additional horsepower capacity, bringing the plant's total to 40,000 horsepower.

BRIDGEBURG, ONT.—Horton Steel Works Ltd. has purchased a tract on Gilmore street, adjacent to its present plant, where it proposes to erect two new plants of the same size as the old works. The old plant will be remodeled and modern equipment will be installed.

COLLINGWOOD, ONT.—Collingwood Terminals Ltd. has awarded contract to Carter-Halls-Aldinger Co. Ltd., Winnipeg, Man., for the construction of the superstructure for grain elevator to be erected on the harbor front here. Engineers, C. D. Howe & Co., Whalen building, Port Arthur, Ont.

HAMILTON, ONT.—National Steel Car Corp. Ltd. has obtained a 38-acre site on which it will erect a plant for the manufacture of automobile parts and frames.

KITCHENER, ONT.—Water commission is considering improving the equipment of waterworks plants here and is asking for prices and data on pumps, diesel engines, etc. Marcel Pequegnat is waterworks superintendent.

LONDON, ONT.—General Steel Wares Ltd., 333 Wellington street, has awarded general contract to J. W. Putherbough, Bank of Mon-

treal Chambers, for the erection of an addition to its enamelling plant here. Building to be 1-story, 150 x 250 feet. George Hunt is architect.

PETERBORO, ONT.—William Hamilton Co. has awarded contract for machinery for the International Co., including eight rod mills together with pumping equipment.

QUEENSTON, ONT.—Hydro Electric Power commission of Ontario, University avenue, Toronto, Ont., is preparing plans for addition to power house and gate house here. Construction work to be started early in the new year. Chief engineer is F. A. Gaby.

ST. CATHARINES, ONT.—W. S. Tyler Co., 3615 Superior avenue, Cleveland, has purchased a site on Ontario street, where it proposes to erect a plant for the manufacture of woven wire screens, screening equipment, ornamental iron, bronze work, etc. (Noted Nov. 13.)

SWANSEA, ONT.—Town council proposes to spend $125,000 on improvements to sewage disposal plant, including the purchase of new pumping machinery, etc. Engineers, Wynne-Roberts, Son & McLean, Metropolitan building, Toronto, Ont.

TORONTO, ONT.—Rogers Batteryless Radio Co., 90 Chestnut street, is having plans prepared by Horwood & White, 229 Yonge street, for the erection of a manufacturing plant on Fleet street. Building to be 2-story and basement, 125 x 250 feet. Bids on construction work and for equipment will be called at an early date.

VANKLEEK HILL, ONT.—Town council will call for bids immediately for the construction of waterworks and sewage plants. Engineer, F. A. Dallyn, 71 King street west, Toronto, Ont.

MONTREAL, QUE.—Robert Mitchell Co., 64 Belair avenue, manufacturer of gas and electric fixtures, metal goods, etc., has purchased a site in St. Laurent and is having plans prepared for the erection of a modern foundry plant.

Recent Incorporations

NEW HAVEN, CONN.—James Graham Co. has been incorporated here to manufacture metal products.

JACKSONVILLE, FLA.—Springfield Battery Mfg. Corp. has been incorporated by W. J. Findley, St. James building.

CHICAGO—Crown Metal Products Corp., First and Illinois streets, has been incorporated to manufacture and deal in electrical fixtures and appliances by Charles A. Urban.

CHICAGO—Swanson Washing Machine Mfg. Co., 3523 West Thirtieth street, has been incorporated with $50,000 capital by Carl W. and William V. Swanson.

CHICAGO—Active Plating Works Inc., 534 North La Salle street, has been incorporated with $25,000 capital to do a general metal plating business by Herman Lehwoldt.

CHICAGO—Aldor Ventilator Corp., 11 South La Salle street, has been incorporated to manufacture and deal in novel improvements for automobiles and other conveyances by Aldor Johnson.

CHICAGO—American Road Machinery Co., 215 North Curtis avenue, has been incorporated with 60,000 shares no par value stock to manufacture and deal in tractors, engines, machinery, etc., by E. J. Robinson.

CHICAGO—W. W. Granger & Co. Inc., 700 West Twenty-second street, has been incorporated with 1000 shares no par value stock to manufacture and deal in electric motors, dynamos, etc., by Randolph Thornton.

CHICAGO—Vapolite Co., 117 West Austin avenue, has been incorporated with $10,000 capital to manufacture and deal in electrical, medicinal inhalers and deodorizers, by Samuel G. Rautbord.

MATTOON, ILL.—Fleshner & Ingle Inc., 213 North Fifteenth street, has been incorporated with $10,000 capital to maintain an automobile service and machine and repair shop, by Charles X. Fleshner.

ROCKFORD, ILL.—Aldeen Mfg. Co., 420 South Main street, has been incorporated with $100,000 capital to do tool and metal stamping by Thorston Erickson.

BOSTON—Star Machine Co. Inc. has been incorporated with $90,000 capital to manufacture pinking machines and parts by Nathan Levine, 11 Albany street, Boston.

BOSTON—Katches Inc. has been incorporated with 500 shares no par value stock to manufacture and deal in fasteners and other mechanical devices by William F. Loughman, Barre, Mass.

BOSTON—Maintenance Supply Co. Inc. has been incorporated with $10,000 capital to manufacture all kinds of electrical and mechanical products, etc., by James M. Reynolds, 40 Berkeley street, Lowell, Mass.

BOSTON—Short Wave & Television Laboratory Inc. has been incorporated with 1000 shares no par value stock to manufacture and deal in electrical radio short wave and television apparatus, parts and equipment by Avigdor M. Morgan, 65 Randolph street, Arlington, Mass.

BOSTON—Twentieth Century Scale & Slot Co. Inc. has been incorporated with $10,000 capital to manufacture and install all kinds of weighing scales, slot machines, etc., by Mark A. Zimering, 107 Homestead street, Roxbury, Mass.

CAMBRIDGE, MASS.—Cameo Overlay Corp. has been incorporated with $50,000 capital to manufacture printing machinery, equipment, etc., by Francis J. Roche, Cambridge.

CAMBRIDGE, MASS.—Every-Ready Oil Heat Inc. has been incorporated with 3000 shares no par value stock to manufacture oil burning apparatus, machinery and equipment by Howard E. Sill, 9 Lockeland avenue, Arlington, Mass.

CAMBRIDGE, MASS.—G. O. Baxter Co. Inc. has been incorporated with $90,000 in preferred shares and $1000 in common shares stock to manufacture and deal in plumbing supplies, etc., and do all kinds of heating installations, by George O. Baxter, 155 Sycamore street, Somerville, Mass.

HAVERHILL, MASS.—Oxley Steel Equipment Corp. has been incorporated with $25,000 capital to manufacture office supplies and equipment of metal and wood, etc., by John H. Oxley, 64 Lexington avenue, Haverhill.

NEW BEDFORD, MASS.—New Bedford-Acushnet Airport Inc. has been incorporated with 5000 shares no par value stock to manufacture and assemble airplanes by James E. Kane, 14 Conduit street, Acushnet, Mass.

NORWOOD, MASS.—Norwood Press Linotype Inc. has been incorporated with $50,000 capital to manufacture linotype composition plates, etc., by Oliver J. Barr, 117 Walpole street, Norwood.

PITTSFIELD, MASS.—Pittsfield Oil Burner Co. has been incorporated with $5000 capital to manufacture and install oil burners, by W. Glenroy Bassett, Longmeadow, Mass.

SPRINGFIELD, MASS.—Morris Katz Inc. has been incorporated with $10,000 capital to engage in sheet metal and roofing business and manufacture and install heating and ventilating systems, by Morris Katz, 20 Alsace street.

WORCESTER, MASS.—Duplex Gas Heating Corp. has been incorporated with $75,000 capital to manufacture all kinds of apparatus for heating and cooking by C. M. Fisher, 33 Enhorn road, Worcester.

WORCESTER, MASS.—Haskins-Haire Wire Works Inc. has been incorporated with $5000 capital to manufacture and deal in iron, steel, manganese, etc., by Daniel A. Haire, 79 Beacon street, Boston.

BAY CITY, MICH.—Saginaw Valley Construction Co., Dean and Vermont streets, has been incorporated with $5000 capital to manufacture air compressors, saws and implements, by Gordon Willis.

DETROIT—Master Tool & Die Co., 3155 East Willis street, has been incorporated with $12,000 capital to manufacture and deal in tools, jigs, dies, etc., by John H. Hubbard and George C. King.

DETROIT—Towle Aircraft Co., 4484 Cass avenue, has been incorporated with $200,000 capital to manufacture and deal in airplanes, parts, etc., by George M. Holley and Earl Holley.

GRAND RAPIDS, MICH.—National-Marshall Spring Corp., 70 Wealthy street, has been incorporated with 6000 shares no par value stock to manufacture and deal in spring and wire constructions of all kinds by James L. McInerney, 201 Norwood avenue.

LINCOLN PARK, MICH.—Lincoln Park Tool Co. has been incorporated with $2000 capital to manufacture tools and do general machine work by Albert A. Robinson, 1525 Chandler avenue, Lincoln park.

KANSAS CITY, MO.—Baldwin Harvester Co. has been incorporated with $2,500,000 capital by Curtus C. Baldwin, Wichita, Kans.

KANSAS CITY, MO.—Kansas City Harvester Co. has been incorporated with $25,000 capital by Sam Sparrow, 908 Gloyd building, Kansas City.

ST. LOUIS—Rainbow Springs Stove Co. has been incorporated by V. W. Krafft, 1431 Hamilton street.

ST. LOUIS—Coalamatic Combustion Corp., 1417 Paul Brown building, has been incorporated to manufacture an underfed stoker for domestic furnaces. L. F. Gates is president.

ST. LOUIS—Gaus-Boyer Mfg. Co. has been organized to manufacture refrigerators, with headquarters at Clinton and Main streets. Harry G. Gaus is president.

ST. LOUIS—Brilliant Tube Sign Co., Theodore Cairns president, has been incorporated to manufacture electrical signs. Plant and office have been established at 4211 Race Course avenue.

KEARNEY, N. J.—Metalcraft Engineering

Corp. has been incorporated with $300,000 in preferred shares and 7000 shares no par value stock to manufacture and deal in metal products by Dan E. Ewald, West Englewood, attorney.

NEWARK, N. J.—Pioneer Iron Works has been incorporated with $100,000 capital by Abraham Hochberg, attorney.

BROOKLYN, N. Y.—Van Sicklen Iron Works has been incorporated with $5000 capital by J. J. Licari, 16 Court street, attorney.

BUFFALO—Eberl Iron Works has been incorporated with 250 shares no par value stock by R. W. Caudell, Buffalo, attorney.

NEW YORK—Waterman Razor Blade Corp. has been incorporated with $100,000 capital by H. O. N. Frankel, 36 West Forty-fourth street, attorney.

NEW YORK—McDowell Pipe Corp. has been incorporated with $50,000 capital to manufacture iron and steel products, by J. J. Traub, 291 Broadway, attorney.

MUSKOGEE, OKLA.—Muskogee Rangers Airplane Co., capital $100,000 has been incorporated by J. M. Moellendick, Wichita, Kans., F. L. Beam, Muskogee, and Fred D. Tiffany, Miami, Okla., to manufacture and distribute airplanes,

PARKERSBURG, W. VA.—Parkersburg Grinding & Machine Works has been incorporated with $25,000 capital by S. R. Nuhfer and J. A. Oliver.

FOND DU LAC, WIS.—Tobin Tool & Die Co. has been incorporated with 500 shares no par value stock by James H. Tobin, Alphonse J. Collard and Albert E. Mietzel. The company recently completed a large addition to its plant.

NANTON, ALTA.—Cement Specialties Ltd. has been incorporated to carry on the business of contractor and manufacturer of builders supplies, by Alexander R. Creig, and John A. Leonard of Nanton.

BRANTFORD, ONT.—Byrotree Pump Co. Ltd. has been incorporated to manufacture and deal in engines, boilers, electric, mining and industrial equipment with $500,000 capital by Arthur S. Williams, David Shapiro, John D. Carroll, all of Brantford.

HAMILTON, ONT.—Hamilton Sales Co. Ltd. has been incorporated to manufacture and deal in automobiles, trucks and accessories with $40,000 capital by Albert Garber, Freeman F. Treleaven, Cameron L. Garber, all of Hamilton.

HAMILTON, ONT.—J. Earle Smith Construction Co. Ltd. has been incorporated to carry on the business as a general construction company and to manufacture and deal in building supplies, by Cecil V. Langs, Ewart G. Binkley, and Howard Morwick, all of Hamilton.

HAMILTON, ONT.—Interprovincial Airways Ltd. has been incorporated to manufacture and deal in airplanes, seaplanes, flying machines, etc., with 100,000 shares of no par value stock, by Thomas B. McQuesten, Wilbert G. Welby, Helen Archbold, all of Hamilton.

TORONTO, ONT.—Peerless Oil Burners Ltd. has been incorporated with 50,000 shares of no par value stock by Mortimer G. Crapper, Helen Gariepy and Gertrude E. Downes, all of Toronto.

TORONTO, ONT.—Motor Trade Supply Co. Ltd. has been incorporated to manufacture and deal in automobiles, motors, engines, machines, etc., with $40,000 capital stock, provisional directors, Joseph M. Garvey, Henry C. Draper, Maurice J. Daly, all of Toronto.

TORONTO, ONT.—Air-Cote of Canada Ltd. has been incorporated to carry on the business as general contractor and engineer with a capital stock of 2000 shares no par value stock by Henry G. Donley, John E. Pritchard, Frederick G. Fitzgerald, all of Toronto.

TORONTO, ONT.—Johnson Super Fuel Oil Burners of Canada has been incorporated to manufacture and deal in oil burning equipment, automatic electric devices, and heating boilers, with $100,000 capital by John H. Woolson, William A. Henderson, and Adam Graham, all of Toronto.

MONTREAL, QUE.—Electrolier Mfg. Co. has been incorporated to manufacture and deal in electrical and other fixtures and accessories, with 7500 shares of no par value stock by George Issenman, John Issenman and Henry Paratte, all of Montreal.

MONTREAL, QUE.—General Aircraft Builders Ltd. has been incorporated to manufacture and deal in airplanes, air ships, flying machines, etc., with $100,000 capital and 2100 shares of no par value stock by Bertrand Migneault, Westmount; Joseph I. Laliberte, and Francois P. Brais, of Montreal.

New Incorporations In Separate Listing

AS NEWS of the incorporation of a concern in the metal-working field is a direct lead to a prospective buyer of various lines of products included in the field of IRON TRADE REVIEW, *notice of such incorporations, as received from various secretaries of state, are being segregated from other news in the Construction and Enterprise department. This makes reference easier for those who regard these leads as more important than others. The arrangement is alphabetical by states.*

New Trade Publications

MONORAIL SYSTEMS—Loudon Machinery Co., Fairchild, Iowa, has issued a bulletin giving the uses of the monorail system which it manufactures.

PORTABLE GRINDERS—Peerless Electric Co., Warren, O., in a current leaflet presents its line of portable grinders in various mountings, with various attachments and its electric fans and special motors for special equipment.

SPEED REGULATORS—Reeves Pulley Co., Columbus, Ind., has issued a bulletin on its speed adjuster, voicing the advantages of variable speed at any rate within the range of the device. It is illustrated to show the adjuster and its applications.

FINISHING COMPOUNDS — Carborundum Co., Niagara Falls, N. Y., has issued a booklet describing its finishing compounds for lapping and finishing metal parts. Its composition and results attainable from its use are described.

AIR HEATERS—Shaw-Perkins Mfg. Co., Pittsburgh, has issued a bulletin on its oval tube air heaters for preheating combustion air and industrial air drying. Advantages claimed for this type of preheater are described and illustrated.

INDUSTRIAL OVENS—Ovens for baking enamel, foundry cores and similar materials are treated in a bulletin by the General Electric Co., Schenectady, N. Y. Illustrations and text cover the ovens, heating units and control mechanisms. Devices for mounting are also shown.

SEGMENT CHUCK—Samuel C. Rogers & Co., Buffalo, have issued a bulletin describing a new segment wheel for mounting abrasive segments for broad surfaces. The wheels are illustrated and their operation shown. They are adapted to use on vertical and universal grinders and various makes of knife grinders.

SHEET ANNEALING—A bulletin by the Brown Instrument Co., Philadelphia, shows how a user of its automatic temperature control has applied it on sheet annealing furnaces to increase production and improve quality of its sheets. Profuse illustrations tell most of the story.

CHEMICALS—National Scientific Corp., 814 Franklin avenue, Chicago, recently has published a catalog of clinical and laboratory supplies. The catalog contains illustrations of several types of microscopes and accessories. A section also is devoted to laboratory furniture.

PORTABLE PARTITIONS — Hyde-Murphy Co., Ridgway, Pa., recently issued a 32-page booklet on its portable partitions, describing and illustrating various uses of this product. It gives plans for offices, and illustrates by sketches the advantages of the partitions. Specifications also are discussed. The booklet contains illustrations from photographs of typical installations.

VENTILATION—Detroit Steel Products Co., 2250 East Grand boulevard, Detroit, recently circulated an 11-page folder on lighting and ventilation. It tells advantages of adequate daylighting and aeration and describes methods used to secure them. It is illustrated by views of typical installations.

LUBRICATION—In its series of monographs on lubrication the Texas Co. has prepared one on the safeguards of lubrication. It is illustrated by halftones and diagrams showing means provided to insure maximum effectiveness of lubricants in machinery. A variety of types of bearings are considered.

ELECTRICAL TESTING—Wagner Electric Corp., St. Louis, has issued the fourth edition of its bulletin on electrical testing. It contains 20 pages on testing of single phase and polyphase motors, testing transformers for core loss, copper loss, polarity, insulation, temperature rise and efficiency. Numerous diagrams aid in making the text clear.

CENTRIFUGAL PUMPER—A bulletin by the Pennsylvania Pump & Compressor Co., Easton, Pa., describes a centrifugal compressor unit powered by a 2-cylinder, 8-horsepower radiator-cooled gasoline engine. It is light, compact and portable and suited to unwatering excavations and similar work within its range.

European Iron and Steel Statistics

Gross Tons

Pig Iron Production

Monthly Average	United Kingdom	France	Belgium	Luxemburg	Germany*
1912	729,000	405,000	192,000	184,800	1,279,200
1913	855,000	427,200	203,800	209,000	1,374,400
1921	218,000	280,300	71,800	79,600	643,200
1922	408,500	428,900	132,300	138,200	770,500
1923	620,000	445,600	179,100	115,400	404,700
1924	609,000	631,100	230,300	177,000	640,500
1925	521,800	696,800	208,500	192,300	834,500
1926	203,500	770,500	278,800	206,100	791,000
1927					
January	434,600	792,400	311,500	224,100	1,044,600
February	571,100	705,100	288,000	204,500	953,600
March	671,800	788,500	309,400	226,200	1,068,900
April	680,000	761,800	305,100	221,000	1,035,400
May	720,100	781,800	314,000	233,900	1,112,100
June	651,300	735,000	297,300	220,300	1,050,900
July	645,800	757,100	314,700	221,700	1,091,600
August	596,100	761,400	311,700	234,500	1,098,100
September	591,500	749,500	304,000	225,500	1,087,400
October	596,300	782,600	317,200	226,600	1,121,600
November	575,900	750,100	308,200	217,800	1,101,900
December	559,100	783,600	311,900	224,600	1,131,700
1928					
January	560,500	796,400	309,700	226,000	1,162,100
February	550,800	772,100	297,300	216,700	1,104,800
March	592,600	843,600	321,400	236,500	1,152,200
April	563,100	821,100	313,220	223,400	1,031,200
May	591,500	854,500	323,700	230,200	1,027,700
June	563,700	830,800	316,000	226,900	1,005,400
July	537,800	822,900	319,300	221,300	1,019,400
August	519,000	844,600	323,500	229,900	1,014,900
September	503,900	909,200	320,000	227,800	970,000
October	543,600	843,600	.....	.....	1,000,000

Ingots and Castings Production

Monthly Average	United Kingdom	France	Belgium	Luxemburg	Germany*
1912	566,000	363,000	206,000	79,400	1,339,600
1913	638,600	384,500	202,300	109,000	1,445,700
1921	308,600	254,500	62,800	61,900	819,700
1922	490,100	372,000	128,400	114,300	960,500
1923	706,800	419,100	186,200	98,300	517,000
1924	685,100	566,000	234,700	154,300	806,500
1925	615,500	608,300	197,700	170,800	1,000,000
1926	296,700	687,900	276,800	184,100	1,012,500
1927					
January	730,700	662,900	315,700	192,300	1,288,500
February	826,800	618,200	292,200	181,300	1,214,300
March	949,600	692,900	309,700	199,800	1,393,600
April	850,100	669,900	296,400	202,800	1,269,100
May	884,600	700,800	316,100	206,900	1,356,200
June	747,300	661,400	295,100	200,000	1,307,200
July	687,100	666,300	309,200	199,800	1,341,100
August	643,100	683,200	320,600	212,500	1,409,700
September	777,000	682,400	285,400	209,600	1,353,600
October	699,000	711,600	307,200	211,800	1,392,300
November	698,700	671,300	305,200	204,200	1,380,000
December	604,900	723,500	305,900	210,500	1,351,100
1928					
January	626,200	738,300	310,700	209,600	1,446,500
February	764,400	726,500	305,600	201,800	1,301,300
March	793,300	793,400	321,100	216,900	1,398,200
April	644,100	724,500	300,300	199,400	1,141,400
May	752,700	781,600	320,100	211,400	1,229,300
June	709,000	784,600	324,300	211,600	1,274,300
July	666,900	739,300	314,700	204,400	1,290,600
August	648,300	780,600	336,800	220,700	1,308,600
September	718,600	745,200	325,700	205,900	1,171,600
October	756,000	821,000	.....	.....	1,285,900

*German pre-war boundaries for 1912 and 1913; from 1919 the figures do not include the Saar district returns.

Imports

	United Kingdom	Belgium and† France	Luxemburg	Germany*
Average monthly 1912	166,400	16,400	87,000	27,300
Average monthly 1913	185,900	14,100	72,900	25,000
Average monthly 1921	136,700	41,300	43,300	54,000
Average monthly 1922	73,500	63,300	47,700	152,300
Average monthly 1923	110,200	58,500	43,700	145,000
Average monthly 1924	202,400	57,100	46,800	160,000
Average monthly 1925	226,700	14,100	44,500	98,400
Average monthly 1926	311,700	14,200	50,200	86,500
1927				
January	555,500	7,900	45,800	129,500
February	443,400	10,100	36,800	143,400
March	478,100	10,500	54,000	129,800
April	404,700	12,000	47,300	200,000
May	355,900	15,100	47,500	186,400
June	332,600	14,100	56,300	186,300
July	336,300	12,000	52,700	189,000
August	286,300	9,900	63,400	211,300
September	312,000	6,900	50,000	210,900
October	336,000	8,100	68,000	232,800
November	284,800	8,200	57,800	223,900
December	280,500	11,400	59,800	190,100
1928				
January	283,900	6,000	65,000	200,800
February	286,900	10,100	72,000	179,600
March	271,500	16,800	70,200	187,700
April	252,700	10,700	61,700	189,100
May	236,900	10,400	63,800	164,800
June	210,400	9,800	74,200	162,200
July	219,000	8,700	71,900	162,200
August	272,400	9,400	75,500	175,600
September	184,500	.....	79,900	155,400
October	261,400	.....	.....	.....

*Luxemburg is included with Germany in 1912 and 1913.

Exports

	United Kingdom	Belgium and† France	Luxemburg	Germany*
Average monthly 1912	400,600	41,500	124,500	482,400
Average monthly 1913	414,100	51,600	129,200	517,300
Average monthly 1921	141,400	133,800	75,600	160,000
Average monthly 1922	283,400	161,400	175,900	209,700
Average monthly 1923	360,000	181,900	207,900	110,000
Average monthly 1924	321,100	231,100	282,200	130,000
Average monthly 1925	310,900	321,700	262,800	267,600
Average monthly 1926	249,000	343,800	308,900	402,000
1927				
January	219,400	463,300	345,900	478,400
February	251,700	480,600	364,500	352,900
March	353,000	472,700	415,000	374,100
April	334,500	519,100	383,800	344,300
May	422,400	461,900	364,800	344,300
June	366,100	432,900	351,300	307,600
July	389,600	454,600	375,700	340,600
August	342,400	465,800	426,700	333,200
September	384,900	453,600	357,100	346,800
October	384,800	508,400	372,900	340,700
November	399,100	449,300	392,900	326,800
December	381,800	440,300	456,300	340,600
1928				
January	332,200	408,100	274,600	363,026
February	317,000	462,700	395,500	390,776
March	409,300	443,500	453,100	334,798
April	344,300	398,800	323,600	412,810
May	359,000	387,000	332,700	378,500
June	365,900	376,000	375,100	420,500
July	333,100	332,900	342,000	431,500
August	369,800	461,500	294,700	461,200
September	295,100	.....	312,400	437,000
October	377,400	.....	.....	.....

†Luxemburg included with Belgium from 1922 onward.

American Iron and Steel Exports, Imports

Gross Tons

	Imports	Exports
1928		
January	58,635	205,766
February	47,628	185,915
March	74,128	221,935
April	72,329	215,184
May	72,106	267,890
June	65,819	262,052
July	47,830	253,336
August	69,914	287,297
September	57,782	228,056
October	63,880	256,870
1927		
January	63,404	215,235
February	49,451	166,128
March	61,872	171,094
April	60,374	192,339
May	79,814	202,708
June	69,017	184,364
July	61,112	190,502
August	68,386	175,636
September	58,464	166,352
October	52,503	170,255
November	61,882	177,928
December	64,188	168,428
Total	750,467	2,180,969

1926		
January	79,067	174,585
February	100,213	157,187
March	93,107	169,438
April	107,636	194,449
May	108,731	173,418
June	124,215	159,506
July	82,411	194,717
August	91,578	171,588
September	85,484	182,071
October	81,830	172,070
November	81,259	219,830
December	75,559	198,189
Total	1,111,090	2,167,048
1925		
January	77,065	141,714
February	92,380	102,302
March	92,110	155,386
April	71,249	155,426
May	68,117	150,612
June	83,330	136,847
July	64,642	138,670
August	68,489	188,963
September	68,445	136,754
October	80,163	141,817
November	79,771	171,134
December	98,400	142,209

Total	943,240	1,762,571
Yearly Totals		
1924	556,281	1,805,064
1923	734,734	2,009,141
1922	712,895	2,005,100
1921	135,825	2,150,276
1920	421,274	4,934,087
1919	322,264	4,397,295
1918	169,110	5,338,019
1917	330,301	6,465,053
1916	328,965	6,110,732
1915	282,396	3,532,564
1914	289,775	1,549,554
1913	317,260	2,745,635
1912	225,072	2,947,596
1911	262,457	2,187,725
1910	510,730	1,537,943
1909	363,984	1,243,583
1908	205,845	964,242
1907	662,358	1,301,981
1906	577,809	1,325,740
1905	416,000	1,011,255
1904	266,398	1,167,674
1903	1,178,797	326,590
1902	1,212,484	1,103,664
1901	221,297	700,852
1900	209,955	1,154,284

Discounts and Extras

Steel Pipe

Pittsburgh and Lorain basing discounts, jobber's carloads.

Evanston, Ill., and Indiana Harbor, Ind., take differential 2 points less discount.

Chicago takes differential 2½ points less than Pittsburgh-Lorain basis.

Butt Weld

	Black	Galvanized
⅛-inch	45	19½
¼ and ⅜-inch	51	25½
½-inch	56	42½
¾-inch	60	48½
1 to 3-inch	62	50½

Lap Weld

2-inch	55	43½
2½ to 6-inch	59	47½
7 to 8-inch	56	43½
9 and 10-inch	54	41½
11 and 12-inch	53	40½

REAMED AND DRIFTED

Butt Weld

1 to 3-inch	60	48½

Lap Weld

2-inch	53	41½
2½ to 6-inch	57	45½

EXTRA STRONG—PLAIN ENDS

Butt Weld

⅛-inch	41	24½
¼ and ⅜-inch	47	30½
½-inch	53	42½
¾-inch	58	47½
1 to 1½-inch	60	49½
2 to 3-inch	61	50½

Lap Weld

2-inch	53	42½
2½ to 4-inch	57	46½
4½ to 6-inch	56	45½
7 to 8-inch	52	39½
9 and 10-inch	45	32½
11 and 12-inch	44	31½

DOUBLE EXTRA STRONG

Butt Weld

½-inch	42	32½
¾ to 1½-inch	45	35½
2 to 2½-inch	47	37½

Lap Weld

2-inch	41	32½
2½ to 4-inch	43	34½
4½ to 6-inch	42	33½
7 to 8-inch	38	25½

(Note—Large jobbers obtain additional preferential discounts of 1 and 5 on black and 1½ and 5 on galvanized. Extra 5 per cent granted in the 4th quarter 1927 and 1st quarter 1928 discontinued April 2, 1928.)

Wrought Iron Pipe

Pittsburgh basing discounts, jobbers' carloads. Individual quotations made on delivered basis.

THREADS AND COUPLING

Butt Weld

¼ and ⅜-inch	+11	+39
½-inch	22	2
¾-inch	28	11
1 to 1½-inch	30	13

Lap Weld

1¼ and 1½-inch	Upon application	
2-inch	23	7
2½ to 3-inch	26	11
3 to 6-inch	28	13
7 to 12-inch	26	11

PLUGGED AND REAMED

Two points less than above

EXTRA STRONG, PLAIN ENDS

¼ and ⅜-inch	+19	+54
½-inch	21	7
¾-inch	28	12
1 to 1½-inch	30	14

Lap Weld

2-inch	23	9
2½ to 4-inch	29	15
4½ to 6-inch	28	14
7 to 8-inch	21	7
9 to 12-inch	16	2

DOUBLE EXTRA STRONG

Butt Weld

½-inch	+47½	+59½
¾-inch	+28	+40
1-inch	+34	+46
1¼-inch	+28	+40
1½-inch	+27	+39

Lap Weld

2 and 2½-inch	+13	+25
3 and 4-inch	+ 8	+17
4½ to 6-inch	+ 9	+18
8-inch	+12	.....

(Note—Large jobbers obtain additional preferential discounts of 1, 5 and 2½ on black and galvanized.)

Boiler Tubes

Pittsburgh carload discounts

STEEL (Lap Weld)

2 and 2¼-inch	40 off
2½ and 2¾-inch	48 off
3-inch	54 off
3¼ to 3¾-inch	56 off
4-inch	59 off
4½ to 6-inch	48 off

Subject to two 5 per cent discounts on full carload shipments. On less than 10,000 pounds, base discount reduced 6 points and one 5 per cent allowed. On 10,000 pounds to carload, base discount reduced 4 points and two 5 per cents allowed.

CHARCOAL IRON

1½-inch	1 off
1¾-inch	8 off
2 and 2¼-inch	13 off
2½ and 2¾-inch	16 off
3-inch	17 off
3¼ to 3½-inch	18 off
4-inch	20 off
4½-inch	21 off

Subject to 10 per cent discount on full carload lots. On less than 10,000 pounds, base discount reduced 2 points and no preferential allowed. On 10,000 pounds to carload, 5 per cent preferential allowed.

SEAMLESS COLD DRAWN

1-inch	63 off
1¼ and 1½-inch	55 off
1¾-inch	39 off
2 and 2¼-inch	34 off
2½ and 2¾-inch	42 off
3-inch	48 off
3¼ and 3½-inch	50 off
4-inch	53 off
4½, 5 and 6-inch	42 off

SEAMLESS HOT ROLLED

1¾-inch	39 off
2 and 2½-inch	40 off
2½ and 2¾-inch	48 off
3-inch	54 off
3¼ and 3½-inch	56 off
4-inch	59 off
4½, 5 and 6-inch	48 off

Subject to 5 per cent supplementary discount for carload lots. On less than 10,000 pounds, base discount reduced 6 points. On 10,000 pounds to carload, base discount reduced 4 points and one 5 per cent allowed.

SEAMLESS STEEL MERCHANT BOILER TUBES

Extras:

Add 5 per cent for lengths over 24 feet and not over 26 feet.

Smaller tubes than 1-inch and lighter than standard gage to be sold at mechanical tubing list and discount.

Intermediate sizes and gages not listed above take price of next larger outside diameter and heavier gage.

SEAMLESS STEEL MECHANICAL TUBING

Base Discounts on New List July 1, 1925

Carbon 0.10 to 0.30 per cent.....50 to 55 off
Carbon 0.30 to 0.40 per cent.....45 to 50 off

SEAMLESS STEEL LOCOMOTIVE AND SUPERHEATER TUBES

Outside diameter	Gage	Net prices per foot f.o.b. Pittsburgh Price
21-inch	12-gage	14¼c
2-inch	11-gage	15c
2-inch	10-gage	16c
2¼-inch	12-gage	16c
2¼-inch	11-gage	17c
2¼-inch	10-gage	18c
3-inch	7-gage	33c
5⅝-inch	9-gage	50c
5½-inch	9-gage	52c

Plus usual extras for forming and for long lengths over 18 feet and for commercially exact lengths.

Plate Extras

BASE

Rectangular plates, tank steel or conforming to manufacturers' Standard Specifications for structural steel, date Nov. 24, 1922, or equivalent, ¼-inch thick and over on thinnest edge (except for ¼-inch or 72 inches wide when ordered to weight in pounds per square foot—see width and gage extras), 100 inches wide and under, down to but not including 6 inches wide, 5 feet 0 inches long up to published limit in length but not over 80 feet 0 inch, are base. Extras per pound for width or diameter.

All Plates Rectangular or Otherwise

¼-inch thick and heavier, but not less than 11 pounds per square foot, if ordered to weight.

Over 100 to and including 110 inches	.05c
Over 110 to and including 115 inches	.10c
Over 115 to and including 120 inches	.15c
Over 120 to and including 125 inches	.25c
Over 125 to and including 128 inches	.50c

Plates less than ¼-inch or lighter than 11 pounds per square foot.

Over 72 to and including 84 inches	.10c
Over 84 to and including 96 inches	.20c
Over 96 to and including 100 inches	.30c

Over 100 inches add .35c to width extras for plates ¼-inch thick and heavier.

GAGE

Plates Not Exceeding 72 Inches Wide

Plates less than ¼-inch gage, to and including 3/16-inch; or lighter than 10.2 pounds per square foot, to and including 7.65 pounds square foot .20c

Plates Over 72 Inches Wide

Plates less than ¼-inch gage, to and including 3/16-inch; or lighter than 11 pounds per square foot, to but not including 7.65 pounds square foot .20c
Plates ordered 7.65 pounds square foot .30c

QUALITIES

Pressing steel	.10c
Flange steel (boiler grade)	.15c
Ordinary firebox steel	.20c
Stillbottom steel	.30c
Locomotive firebox steel	.50c
Marine steel	1.50c
Hull materials subject to U. S. Navy Dept. specifications for medium or soft steel	.10c
High tensile hull steel subject to U. S. navy department or equivalent specifications	1.00c
Boiler steel subject to U. S. navy department specifications, classes A-B	1.50c

Hull plates to hull specifications, required to stand cold flanging, take extra for flange steel.

Floor Plates

Checkered plates 1.75c

Checkered plates are not furnished to sketch and are rolled from "Stock Steel" only. No physical tests will be made on checkered plates.

INSPECTION

Mill inspection .....No extra

Charges for other inspection, such as Lloyd's or American bureau of shipping, will be made by inspection bureau direct to buyer.

CUTTING

LENGTH OR DIAMETER

All Plates, Rectangular or Otherwise

Five feet and over up to published limit of length, but not over 80 feet.....No extra
Under 5 feet to 3 feet inclusive ..... .10c
Under 3 feet to 2 feet inclusive ..... .25c
Under 2 feet to 1 foot inclusive ..... .50c
Under 1 foot 1.55c
Over 80 feet to 100 feet inclusive ..... .10c

Over 100 feet add .25c plus .05c for every additional 2 feet or fraction thereof.

Regular Sketches

With not more than four straight cuts. (Including straight taper plates)
Additional extra ..... .10c

Irregular Sketches

With not more than four straight cuts. (Sketches cannot be sheared with re-entrant angles)
Additional extra ..... .20c

Model 24-P ejection type press, having box 100" long, 20" wide, 42" deep. Finished bales measure 20" x 14" x 14" minimum. Can be equipped with power operated loading hopper.

LOGEMANN SCRAP METAL PRESSES

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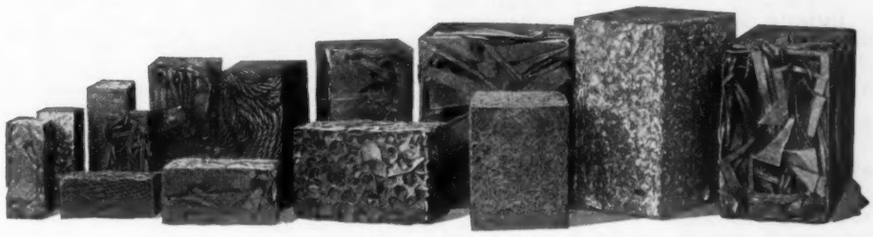

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